JOURNAL

OF THE

Royal United Service Institution,

WHITEHALL, S.W.

PUBLISHED UNDER THE AUTHORITY OF THE COUNCIL.

Authors alone are responsible for the contents of their respective Papers.

VOL. XLV.

JULY TO DECEMBER, 1901.

LONDON:
J. J. KELIHER & CO., LTD., 33, KING WILLIAM STREET, E.C.,
AND 99, VICTORIA STREET, S.W.

1901.

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LONDON:
J. J. KELIHER & CO., LTD.

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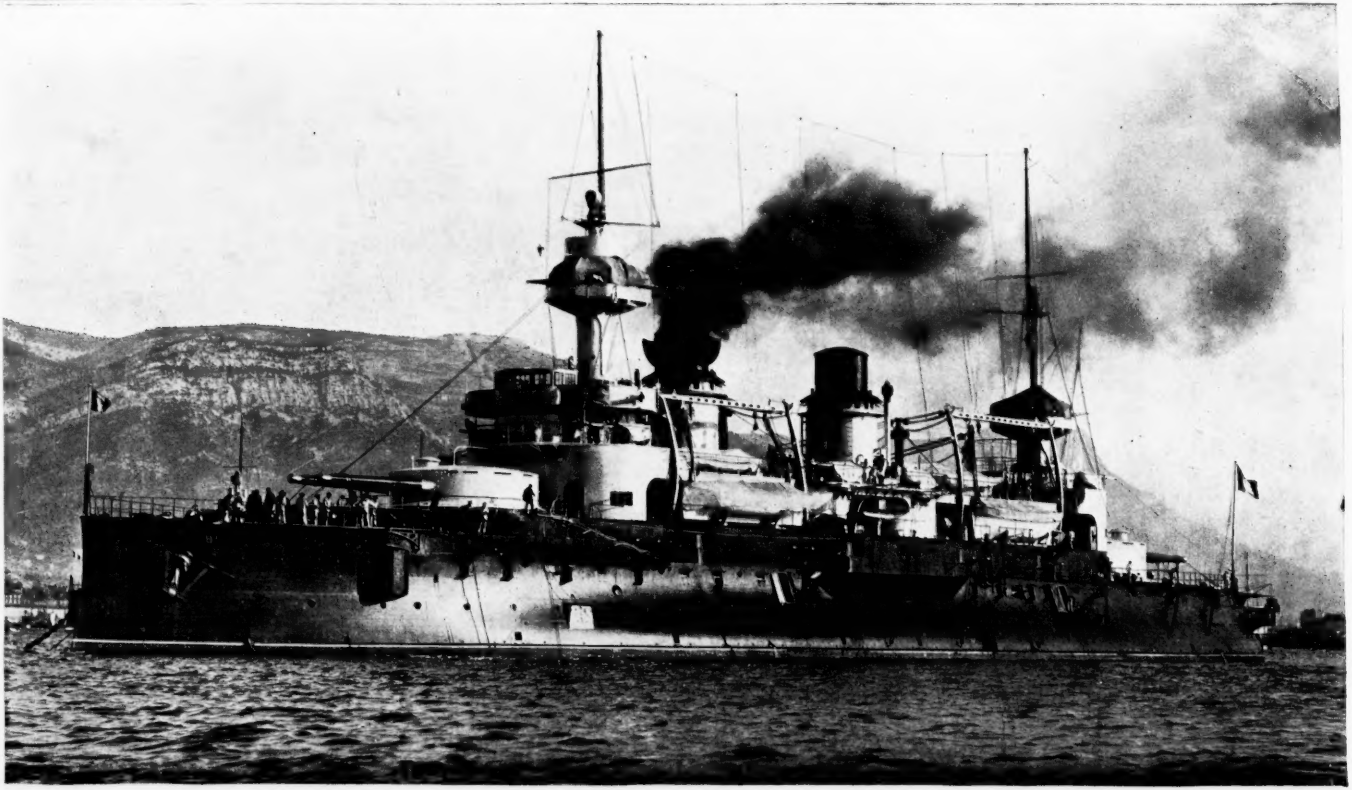

NEW FRENCH BATTLE-SHIP "GAULOIS"; Displacement, 11,275 tons; I.H.P., 14,500; Speed, 18 knots.

ARMOUR PROTECTION:—Water-line belt, 15·8 inches; turrets for heavy guns, 15·8 inches; casemates for secondary battery, 3 inches.

ARMAMENT:—Four 12-inch; ten 5·5-inch Q.F.; eight 3·9-inch Q.F.; twenty-six small Q.F., and eight machine guns, with 5 torpedo-discharges, 2 submerged.

THE JOURNAL

OF THE

ROYAL UNITED SERVICE INSTITUTION.

VOL. XLV. JULY, 1901. No. 281.

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SECOND MILITARY PRIZE ESSAY.

Subject :—

"LESSONS TO BE DERIVED FROM THE EXPEDITION TO SOUTH AFRICA IN REGARD TO THE BEST ORGANISATION OF THE LAND FORCES OF THE EMPIRE."

By Lieut.-Colonel R. H. MORRISON, late 18th Hussars.

"*Pro Patria remamur.*"

IN dealing with the subject of this essay, it seems advisable that we should consider the lessons to be drawn, in regard to organisation of the land forces, under the following headings :—

I. Adequacy of the Empire's land forces and armament.

II. Training and equipment.

1. Cavalry, Mounted Infantry, Volunteer Cavalry.
2. Infantry.

III. Staff Officers.

I.—ADEQUACY OF THE EMPIRE'S LAND FORCES.

When Mr. George Wyndham, Under Secretary of State for War, delivered his speech on the Army Estimates on 2nd March, 1899, he is reported to have said :—"There are features in our system which seem, on the face of them, open to attack. Some of our critics insist upon the youth of our men in our home battalions ; the drafting of men out of one unit into another ; upon the obscuring, in certain cases, of some ancient traditions ; or, again, perhaps, upon the reduction of some of our six-gun batteries to four-gun batteries. Now, all these features, if considered in themselves and apart from the purposes for which the whole of our forces are raised, may seem somewhat irrational.

"The British Army is raised under certain limitations to effect certain purposes. The limitations are that our Army must be a voluntary Army, and that it must not be extravagantly dear.

"The purposes are four in number . . . . .

1. "We are bound to provide a British Army for India, which, since India pays for it, must be up to the standard of efficiency for which she contracts.
2. "We are bound to provide garrisons for some of our Crown Colonies, for some foreign States that we happen to occupy, for our coaling stations and naval bases.
3. "We must have at our command a small force to dispatch whenever a small war arises out of the impact of our civilisation with barbarism.
4. "We must be ready against the chances of a great war involving the risk of invasion."

He then goes on to point out how very remote would appear to be the contingency mentioned in the fourth purpose above named, and to urge that "we must have a Field Army adequate for home defence, and, when the command of the sea has been assured, adequate also to deliver a counter-attack."

The contingency of one of our small wars becoming suddenly a call upon the Empire for 250,000 men, whilst Great Britain was thought by some to stand upon the brink of a possible invasion, was something which did not enter into the heads of the Cabinet when the Government defended its very modest programme of Army augmentation in the spring of 1899, within some seven months of the outbreak of hostilities. That the nation and the Government realised the possibility of European complications in the succeeding winter, when our reverses in South Africa had made the situation painfully acute, is unquestionable; the measures taken without delay to supply the places of the men and guns despatched to South Africa was but a reply to the unfriendly tone of our Continental neighbours.

The first great lesson—greatest of all—to be drawn from our struggle with the South African Republics has, therefore, been the inadequacy of our Army system to meet the requirements of a contingency which Mr. Wyndham, whilst pronouncing it to be, in his belief, remote (*i.e.*, that of a great war involving the risk of invasion), also characterised as "a contingency so dire that our Army system must also be susceptible of adaptation to meet even that dire contingency should it at any time arise."

Dealing first with the artillery, Mr. Wyndham, in March, 1899, stated that he had then no reason to believe that the force of horse and field artillery allotted for India and the Colonies was insufficient; in the matter of garrison artillery alone did he urge the necessity for the raising of the remaining 3 companies of the 11 sanctioned in 1897. He concluded by adding:—"Nor is it urged, as far as I know, that we have not sufficient artillery at our command for any small war," which, in view of the events of the autumn and winter of that year (1899), we may take as a sub-

stantially correct estimate. Turning, however, to the question of the artillery of the Field Army for home defence, it was stated that an increase from 44 to 54 batteries was considered necessary, and that the 10 batteries still required would, Mr. Wyndham expected, be completed in two years' time. Circumstances over which the Under Secretary of State for War had no control have somewhat increased that estimate, and accelerated the progress of augmentation. For purposes of public enlightenment it were better that the pronouncements of War Ministers always denoted the number of guns required, since there are such things as "four-gun batteries," although the six-gun battery is ordinarily understood to be the unit in our Army.

In Mr. Wyndham's explanation above quoted it would have been more satisfactory to know whether it was proposed to add 54 guns to the establishment of the Home Army, or only 36 guns. It is amusing and instructive to note Mr. Wyndham's final words on the subject of artillery augmentation :—" We are raising them" (*i.e.*, batteries) "at the rate of five a year, and I am informed by those who are in a position to know that it is impossible to raise them any faster"! Not one word was mentioned, however, touching the quality of our field gun—the 15-pounders of our field batteries. Yet the performances of these guns have been very seriously challenged by persons who have had the most ample opportunities of comparing them with the guns used by the Boer armies throughout the campaign. There can be no question that owing to the heavier calibre of some of the guns brought into the field by the enemy, supplemented by light field guns of very high velocity, our field artillery did not, in the earlier stages of the war, show to the advantage that was expected of it. The shortness of the ranges at which it was possible to burst our service shrapnel, since considerably increased by improved fuses, compelled our guns to either come into action at ranges practically beyond their power, or to risk inordinate losses.

The fact that it has been demonstrated in the South African War that the small-bore rifle can be effective even at 3,000 yards, has also a bearing on the future of artillery, the effective range of which should be as great as possible. Our artillery officers, or the many of them, to whom I have spoken on the subject, urge that the ranges commonly existing for artillery in South Africa cannot be found in England, or but rarely so, and that consequently our service conditions for guns, based upon the experience chiefly of home practice ranges, are not designed to meet the requirements of a country where positions are open and visible for miles, and the atmosphere abnormally clear. It is, however, to be observed that the conditions on the frontiers of India are in a large degree similar, and that should an enemy—Russia, for instance—assail us there, with guns superior in range and rapidity of fire to our own, there would be found the same shortcomings as in South Africa. It is true that the Boers fired at ranges up to 9,000 yards with their Krupp high-velocity guns, but their shells were percussion segment shells which burst with marvellous accuracy but, for the most part, entirely harmlessly. The writer witnessed a

duel between a 4·7 gun of ours and two 9-pounder Krupp guns of the enemy; the range taken for the 4·7 was 9,000 yards, and whilst its shells were bursting apparently very adjacent to the enemy's guns, which, by the way, were reduced to firing black powder that day, the Krupp shells, home-made in Boer factories, were dropping all round and even under the big gun—always bursting without results. Needless to say, our field guns, four in number, were powerless to join in such a contest, and even the 4·7 had eventually to give it up and turn its attention to searching hidden hollows at 6,000 and 7,000 yards with heavy showers of its shrapnel.

And this brings us to the consideration of the value of heavy field ordnance, another important point in our organisation which we shall have to accept as an outcome of our struggle with the Republics. It is hardly necessary for me to here enter into the question, save to call to recollection the admitted fact that the Boers contrived with, so far as we are aware, no previous arrangement, to transport their heavy guns of position through a country with but few railways and possessing no roads of any excellence, according to our standard. They furthermore have removed these guns, even from positions where the marvel was how they ever reached such places at all, under the hottest pressure from our troops, with invariable success and extraordinary celerity. That our troops failed to obtain even one of these trophies of war, has been, perhaps, the greatest puzzle of all. What the Boers could do under very difficult conditions, we could do equally with the resources at our disposal; and the long marches over bad roads, across mountainous country and bad drifts performed by the 4·7 and 5-inch guns with many of the columns, has demonstrated the practicability of adding this powerful artillery to the establishments of our Field Army. Whether the conditions of modern war require heavy field artillery of the weight and calibre of these gun is, I think, doubtful. Possibly a somewhat lighter gun, throwing a lighter shell than the 45-pound one, would meet all requirements for long-range field artillery, but the experiences of the South African War distinctly point to the necessity of the Army being supplied with a very much more powerful and longer ranging weapon than the present 15-pounder, and also of the addition to our field artillery of a proportion of howitzers, whose usefulness will be fully exemplified in future wars in which highly scientific field fortification will play a very important part.

There is yet another point which I venture to think has been impressed upon us by our late experiences in war, the advisability of the early introduction of a Q.F. field gun, and, in my humble opinion, one possessing a much higher velocity, and consequently ranging further with shrapnel than the present gun. I am also strongly in favour of reducing the calibre of the field gun in order to meet the necessity, which I believe now exists, for a gun of lighter draught behind the horses, and also to meet the increased demand for ammunition consequent upon the introduction of rapid fire into the artillery, especially that of the attack.

It is hardly necessary to draw attention to the fact that the introduction of a proportion of long-range heavy guns into our field establish-

ments in a great measure counter-balances the ill-effects that may be possibly urged against the reduction in calibre of the field gun. On the other hand, the artillery officers themselves admit freely that the present 15-pounder and its load is too much for the teams under stress of service conditions, and, indeed, one has only to remember the appearance of the powerful horses sent with the artillery to South Africa after a few months of constant marching, always, of course, with the infantry, to appreciate the importance of reducing the extreme weight they have to draw over heavy ground and up steep inclines. It is a painful fact, but nevertheless a fact, that the inability of the field guns to move a couple of miles at a trot, even after the utmost saving and care of their horses (to an extent to excite adverse comment), was a common topic with officers of other arms. It was not only remarkable, but distressing, to see guns sometimes crawling along a mile or two over hard veldt to take up a position, whilst the other arms were waiting and watching their slow progress. In many instances the artillery horses were practically foundered during the campaign, and it would take a very bold man to eliminate the question of weight behind the horses from the solution of the cause or causes conducing to this unfortunate loss of mobility. I would advocate yet further the mounting of the gun detachments as in horse artillery to further lighten the loads, for the gunners must ride on the limbers if the guns are moving fast, and it all tells in the day's work on the horses.

It may be taken for granted that artillery, unless under exceptionally favourable circumstances of cover from view and fire, will in future find it no easy matter to keep in action within even 1,200, or, perhaps, 1,500 yards, of infantry; at these ranges the modern rifle has proved its efficiency beyond previous expectation. Colenso has demonstrated what artillery must expect, should it place itself within 1,000 yards of the enemy's riflemen.

In all well-prepared defensive positions we may reasonably expect that the defence will have arranged for an invisible chain of advanced posts in front of the main position, calculated to keep at a distance cavalry reconnoitrers, and compelling the artillery likewise to open at much greater ranges on the main position than has been heretofore considered as likely. Owing to the absolute invisibility of smokeless powder at even very short distances it becomes almost impossible to locate the fire of modern small arms, whilst with the use of the magazine the defence can render an estimate of the numbers firing almost impossible. These facts, availed of so largely by the Boers, were the cause of many surprises to our troops, of which the loss of the guns and infantry supporting them at Colenso is a fair and well-known sample.

This accentuates the necessity for longer range field guns. Moreover, in the future it seems debatable whether the artillery preparation for an attack upon a position will have, even remotely, the value hitherto claimed for it. Since infantry must now assume a very extended formation when within 2,000 yards of the enemy's advanced trenches, posts, and rifle pits, or whenever cover from view and fire ceases to protect their advance in closer formation, it is no longer necessary that the

defence should fully occupy its works and entrenchments when an artillery preparation is in progress, unless it also be possible to assail the attacking infantry with long-range rifle fire. The artillery of the defence will moreover have, presumably, the advantage of well-concealed positions difficult to discern at all in the absence of all smoke from the guns, whilst the attacking artillery must endure the disadvantages and run the risks consequent upon taking up its positions in view of that of the defence, of the location of which it will be ignorant at least for some time.

I am, therefore, inclined to the belief that the prolonged artillery preparation, hitherto a leading feature in the programme of the attack, will in the future give place to a bombardment of the enemy's positions commencing whenever the infantry come under an appreciably severe rifle fire, denoting that the enemy has manned his trenches. It will then be necessary to pour the maximum of shell fire possible on the entrenchments of the defence, searching all parts which at all promise to hold the enemy's infantry, and endeavouring thus to keep down his aimed fire as much as possible. Similarly the object of the gunners of the defence will be to silence the guns of the attack as early as possible, or at least to diminish their fire. To obtain the best results in either case, the Q.F. artillery would seem to be an essential. In fact, I maintain that results proportionate to the expenditure of ammunition will not in the future accrue from long artillery preparation of the attack, and that the object to be attained will be the heaviest deluge of shrapnel poured incessantly on the defenders' lines whilst the infantry of the attack are pushing as rapidly forward as the distance and its losses will permit, to gain decisive ranges.

These are, I think, valuable arguments for the adoption of a Q.F. field gun in our Service.

Except for machine guns, I could not advocate the adoption of shields for field guns to enable them to be served at closer ranges under rifle fire. The reduction in weight is, I believe, of paramount importance, and even with shields I doubt the possibility of continuing to serve guns under a close fire such as that at Colenso, whilst the shield would not enable guns once compromised, at too close quarters, to be extricated. I cannot see also why the bullets in the shrapnel projectile should not be reduced in size somewhat, to enable the burst of a smaller shell to produce an almost equal number of projectiles as those in the present 15-pounder shrapnel. The 1-pounder (approximately) Maxim gun, now known as the "Pom-pom," has found favour during the war, chiefly, as I believe, because of its novelty, and because when the Boers first tried it on us we did not like it. It must be admitted that, morally speaking, it is the most unpleasant of all the infernal machines of war; but its actual destructive properties are quite out of proportion to its moral effect. I much doubt its value as a destructive agent, except, perhaps, when opportunity may offer for its use upon a dense mass of men—a thing which ought not to be a common chance in these days. Against savage peoples, who attack as the Dervishes did at Omdurman and elsewhere, it would be a valuable

engine. For this reason, chiefly, our artillery should not be without it in the future.

To sum up then, so far as regards our artillery, I think the principal lessons in organisation we have been taught are these:—

That we require permanently a sufficiency of batteries to give us on mobilisation for war 120 field guns and heavy guns, suitably mounted (excluding howitzers), to each army corps, including those for home defence only. This is taking Mr. Wyndham's proportion as stated to be necessary, in his speech in March, 1899, and is that also in the French Army.

That the field gun of the future should be a quick-firer, of reduced calibre and lighter behind its team.

That the Auxiliary artillery forces of the Empire should be brought into unison with the Royal Regiment of Artillery, as regards armament and other details, as far as practicable, and especially as to our own reserve forces at home. It might also be possible to establish an artillery reserve in the Colonies with liability to serve in emergency, and it would be a step in the right direction if a proportion of appointments in the Royal Artillery were given each year to qualified and recommended young officers from corps of Colonial artillery.

If four-gun batteries be maintained in time of peace, the equipment and guns necessary to augment them to full strength should be kept actually ready for issue at a moment's notice.

The Cavalry.

Following Mr. Wyndham's sequence in dealing with the establishments of the Army in March, 1899, we next come to the cavalry; and of all the branches of our Empire's Army, none, to my humble thinking, requires vigorous re-organisation more than this arm.

The first and most important lesson taught us by the severe strain upon our resources in the matter of mounted troops, which followed upon the declaration of war in October, 1899, has been the total inadequacy of our available cavalry for a war of any magnitude.

I will again quote Mr. Wyndham in the House in March, 1899:—

"I now come to the cavalry. Again pursuing the same order, during the year we have to find nine cavalry regiments of the Line for India, and for Africa we have now to find three cavalry regiments, and so far as I know we are not required to find more. But for our field army, which we have to provide to guard against the risk of invasion, we have to find four cavalry brigades of three regiments each, and two regiments for each of the three army corps. That would mean twelve cavalry regiments for the four brigades, and six for the three army corps, making eighteen regiments in all. Towards that at home we have sixteen cavalry regiments of the Line, and we can count upon one regiment composed out of the three regiments of Household troops, making seventeen in all I am ready to admit that we fall short by one of our ideal, namely, to have eighteen regiments, but that ideal is a very high one, of having four independent cavalry brigades to the three army corps, and it amply covers

all that we have pledged ourselves to effect, namely, to have enough cavalry for two army corps which could be put on board ship to be sent abroad."

Within the year from the date of making this announcement in Parliament, we find Mr. Wyndham's "very high ideal" has become absurdly inadequate for the situation, and the eighteen cavalry regiments, including a composite Household Regiment, the proportion due to three army corps, are striving to perform the cavalry duties for a field force of over 200,000 men, or approximately five army corps.

By Mr. Wyndham's own admission we possessed sufficient cavalry for two army corps which we could send abroad. Deducting the two regiments already in Natal, and the three borrowed from India, a loan which it would be unwise in the extreme to reckon upon for future emergencies, we were only able to take thirteen regiments from the Home establishment for service in South Africa. That left us but five regiments of Line cavalry to garrison Great Britain and Ireland; and what depletion these regiments underwent, in order to despatch the twelve Line regiments for South Africa, can be comprehended by any person cognisant with the methods, unavoidable on such emergencies, in our Army; methods by which cavalry regiments are brought on to a war footing at the expense of others, especially under the abortive system of the so-called "reserve squadron," latterly in vogue. The raising of four temporary "reserve regiments," one of each class in the cavalry, may have filled the gap on paper, and has possibly fulfilled the object in view, but no person having the welfare of the Empire at heart can quote the arrangement as meeting the difficulties of the situation in a satisfactory fashion. The cavalry force sent out, mustered approximately 9,000 sabres for a field army of 246,000 men! [1]

Does there now exist in the mind of the most unyielding optimist amongst us any doubt as to the necessity of forthwith placing our cavalry upon a more suitable footing as regards numbers, in view of the possible requirements of the future?

Again I must quote Mr. Wyndham. In the same speech, and touching the cavalry, he says:—"In the second place, for 'shock action,' it is held that the Reservists are not sufficiently trained. It is held that all the men and all the horses of a regiment which might at very short notice be called upon to take part in war as an integral unit, should be trained by that regiment in times of peace."

A propos of all this, it is interesting to speculate upon the efficiency or otherwise of the thirteen regiments despatched from home at the shortest notice last winter had the Boers possessed a cavalry relatively equal in quality to their mounted infantry, and had "shock action" been the order of the day. And what was the proportion of men (other than Reservists) and of horses in each regiment who had never received any training at all in the corps to which they were drafted for service! There seems to me little doubt that most or all of the remaining five

[1] Field-Marshal Viscount Wolseley, 18th October, 1900.

cavalry regiments would have been despatched to South Africa in due course, had it been possible to complete them in efficient men and horses, whilst feeding the regiments already at the front. Greater numbers of fully trained mounted troops were badly needed throughout the war, and the 10,000 Imperial Yeomanry, mostly absolute recruits in a military sense, were certainly, at the outset, more suited to garrisoning Great Britain and acquiring some knowledge of cavalry duties than to be sent into the field against an enemy excelling in the very particulars in which the amateur soldier from home was most deficient.

It is difficult to find an excuse for a military nation which leaves its efficient soldiers at home and sends its raw recruits to be the "eyes and ears" of its Army in the field. We can only surmise that such a condition of things arises from the supply of the trained article having been already exhausted! Such most certainly was our case. If Mr. Wyndham's speech meant anything, it must have referred to the urgent necessity for such measures as would keep the small cavalry force in Great Britain and Ireland always on a war footing and ready to take the field.

With the employment of the cavalry, strategically or tactically in the war in South Africa, we have nothing to do; but with the results, in so far as they concerned the numerical efficiency of the Army, we have something, on the question of organisation, to consider. There is no very apparent reason why so large a proportion of the cavalry should have been, as it unquestionably was, in a practically dismounted condition at short intervals of time after each forward movement of the Commander-in-Chief, unless it be sought in the excuse pleaded by every cavalry officer I have met, of whom I asked the question, viz., that "The cavalry has never had a chance from first to finish," they all urged; "there has never been anything like enough of it, and, in consequence, it has had its horses worked literally to death."

This I know to have been the case. Much, very much, was expected of the arm at the outset; the conditions of warfare were unsuited to the tactics and action it had heretofore been trained to adopt, and it was expected to execute huge turning movements in conjunction with the masses of infantry moving on the front of the enemy's positions, to assume the rôle of mounted infantry dismounted and assault positions in flank or rear, and then to resume the rôle of cavalry and carry out a pursuit of days' duration! It was, perhaps, chiefly in this latter phase of the programme that its physical inability to go on for ever, machine-like, brought it down to the necessity of marching as infantry. Had the proportion of cavalry proper been doubled it might have been possible to lighten its task, and, at all events, sufficient would have been available in fresh condition to follow up successes. It must be remembered that the Boers in the early stages of the war moved with large laagers of ox-wagons; yet very rarely were we able to press their retirements sufficiently closely after forcing them from strong positions to enable us to capture their train and supplies.

What may we expect in any future war on modern principles, where our cavalry will have to play its orthodox rôle, in which its losses *ought* to be much heavier than in this war?

I have said enough to show the necessity for a very considerable increase in the force of cavalry we keep available for wars abroad. It is impossible to train cavalry on the outbreak of an emergency, and, as I propose to show further on, the South African War has demonstrated this among other things.

I next come to the all-important question of the weight to be carried by the cavalryman's horse. So long, I suppose, as Continental neighbours continue to keep up cavalry designed for "shock action," Great Britain cannot afford to ignore the theory that weight on the horse, consistent, of course, with its not being unduly crushing on the animal, is more or less an essential for the "charge."

I have for many years had my own theory on the question of extremely mobile light cavalry, really well handled, *versus* the extremely heavily weighted dragoon moving more massively, and with a less highly-trained system of manœuvring. It works out much on the idea of the combat between a very agile light-weight pugilist and a somewhat heavy bruiser fighting on a programme he cannot conveniently vary. Anyhow, I am prepared to advocate a very much lighter class of men; for lancers and hussars, at all events, a nine-stone man at the outside.

I advocate the abolition of the sword in the lancer regiments, and when proceeding on service the arming of all regiments with either the lance or sword, but none with both, or a proportion of regiments with one or the other weapon; the substitution of a longer range weapon—with 1,500 or 1,600 yards range at least—in lieu of the present carbine, which is less reliable at long distances, and the introduction of the bandolier, supplemented by a reserve pouch if necessary. The present stamp of saddles are somewhat heavy, but they have done exceedingly well in South Africa on the whole, and certainly have caused fewer sore backs, even when put on ponies, for which they were never designed, than the average saddle worn by the Yeomanry and local Colonial contingents. The cavalry bit is unnecessarily heavy, and the breast-plate might well be dispensed with. In addition to the wallets now on the saddle, saddle-bags should be issued for active service for one or both sides of the saddle, and a pack animal (pony or mule) should carry everything but the soldier's cloak, and even that should be dispensed with on the saddle in climates where wet is the exception, and when the men can reasonably expect to get their pack animals along with them.

The cavalryman's "service marching order" is a contrivance which will never survive the first month of any campaign. Let him use it at home and in time of peace; it has the great advantage of teaching him how to "contrive" the packing of the few absolute essentials when on service; but either carry all the changes of kit, etc., considered necessary to health and cleanliness on one pack animal between so many men, or in light carts with the transports.

It is useless to carry lance, sword, and rifle against savages—the lance is here the weapon; both it and the sword are practically useless against the Boer, whilst the rifle is all-important. Yet our cavalry could not quit the extra weight, from 7 to 14 lbs. in cases of hussars and

dragoons or lancers, but must needs carry all these emblems of "shock action" tactics through the campaign on already over-weighted ponies. I have never yet heard of a Boer carrying one of our trooper's swords or a lance, although I have found these weapons as trophies of war in their farm-houses; the despised Boer was sensible enough not to ape our cavalry.

As the experiences of this campaign have taught us how easily a few resolute men armed with, and trained to use, the modern small-bore rifle can successfully keep at bay a comparatively large force of cavalry acting as such, the lesson is not to be thrown away. I do not advocate the substitution of a mounted infantry *rôle* for the "shock action" of cavalry, but I do lay stress upon the arming of that branch with the best of magazine rifles, and its higher training both in musketry and in the essentials for working intelligently dismounted, should occasion require it. And I venture to assert that in the future many such occasions will arise, and that no reconnaissance will be successfully carried out without having resort at some point or other to the dismounted rôle. A handful of dismounted riflemen can effectually check any small body of mounted men, and there will be no option but to force the way with rifle bullets where cold steel cannot reach.

At a later period I shall offer some remarks upon the lessons of the war affecting the question of mounting the cavalry and mounted infantry, as also with regard to a linking system more suitable for the eventualities of small wars, than the regimental system with bogus reserve squadrons. Before, however, leaving this part of the subject I think it may be safely deduced from the experiences of the war that at least 1,000 mounted infantry should form a component part of each cavalry division under the organisation for war. The value of this body, as releasing the cavalry proper, and enabling it, or a portion of it, to be held in hand for employment in its proper sphere after a victory, is self-evident to all persons. Also experience in South Africa has demonstrated that the absurdly low proportion of one squadron per division of infantry as "divisional cavalry" is wholly inadequate to the requirements of a division. In hardly any case will more than one division operate on the same road, and a squadron of cavalry cannot cover the march of a division and supply the mounted parties and patrols necessary in connection with a force of 10,000 men. At the least, one cavalry regiment should be detailed with each division, as was the case some years ago in the organisation scheme for war. Mounted infantry do not supply the needs of a division in this respect. When broken up and scattered about for reconnaissance, etc., which is not the rôle of mobile infantry, the value of this most important arm is squandered, and when it is most required on the field of battle, for turning movements, etc., it is too weak to effect its purpose, or is away beyond the call of the general.

In the war in South Africa, in the absence of any Boer cavalry, it appears to me that the cavalry would have been better employed with the independent divisions working through the enemy's country than as

cavalry divisions—its place being taken in a great part by the mounted infantry and Imperial Yeomanry raised for mounted infantry work which should have been concentrated for use as mobile infantry, and accompanied by only the proportion of cavalry necessary to cover its march. It is a mistake to expect tired-out horses to follow up a victory over well-mounted men in retreat; to have any chance, the horses of troops designed to pursue after victory, must have been spared as much as possible the wear and tear of extended reconnoitring and screening movements previously.

I therefore may sum up the case. We require additional corps of cavalry, and greater facilities for remounting them suitably in war.

A better system for feeding the units abroad without depleting *all* the regiments at home of a proportion of their efficient men. Reduction in the weight of the cavalry soldier, his higher training in the use of his rifle, and this not to supplant but to supplement effectively the mounted rôle of the arm.

A better proportion of cavalry with every independent infantry division—the addition of a battalion of mounted infantry to each cavalry division.

I am constrained to offer, finally, a suggestion on the re-organisation of our cavalry, apart from its much required augmentation by some new regiments. At present we have 28 regiments of Line cavalry, and of these in peace-time India has had 9, the Colonies (Egypt and South Africa), 3, and 16 at home. Of all these 28, ten are regiments of Dragoon Guards and Dragoons, six regiments of Lancers, and twelve of Hussars. The reserve squadron system has, I believe, been found to be a failure, and, if I understand aright, will be shortly abolished. It had from the outset practically nothing in common with the German system except the name, and was, as I am aware, condemned by every cavalry commanding officer. The difficulties in the way have been, for many years past, the feeding of the cavalry regiments abroad and the maintenance of a certain proportion at home fit for immediate active service. The Cavalry Depôt was sentenced to abolition (which was never fully carried out), and an experiment tried of drafting men from certain regiments at home to regiments of the same class abroad, and *theoretically* the training of all men and horses in home regiments by the reserve squadrons. For endless reasons foreseen by many cavalry officers at the outstart, this entire plan was a failure. It deprived regiments of a squadron on parade without increasing their efficient strength for service anywhere but on paper.

The Cavalry Depôt was not satisfactory—the means never properly existed there to train the drafts for India, etc., as they should be trained—and a number of young soldiers were crowded into one barrack with insufficient horses, insufficient exercise grounds, insufficient musketry advantages, and last but not least as a composite corps insufficient in officers and old hands to train and leaven the mass. I have had evidence before me of the poor attainments of men of nearly two years' service on joining in India with drafts from Canterbury. The

other alternative, adopted when the depôt was abolished a couple of years or more ago, was the drafting from regiments at home under conditions somewhat similar to those in the infantry of the Line.

My proposition is this, as briefly as I can put it.

Three permanent brigades of Dragoon Guards and Dragoons—two of three regiments and one of four. Total, 10 regiments.

Two brigades of Lancers and 4 brigades of Hussars, all of three regiments each. Total, 18 regiments.

Nine regiments are always in India—probably at least three in South Africa. Total, 12.

Take India, a permanent garrison, first. Cavalry garrison to be three regiments of Dragoon Guards or Dragoons, two of Lancers, and four of Hussars.

The three in South Africa to be one of each of the above classes, on the higher establishment as circumstances dictate, but these may not be permanent if my other suggestion for extra local force be carried out.

This leaves for home service six regiments of Dragoon Guards and Dragoons three of Lancers, and seven of Hussars.

Abroad we have one regiment out of each brigade, at home one on the war footing, and one on the "training" establishment to keep the war strength regiment complete always in men and horses, by exchanging the temporarily unfit, and training all recruits and young horses for the other two regiments of the brigade—the one in India or South Africa requiring only drafts of *men*. With existing establishment of 28 regiments, two of the regiments in South Africa would be those that otherwise would be on war strength at home, the feeding link being alone in Great Britain in those two brigades.[1] The regiments so linked to enjoy existing distinctions of numbers, uniforms etc., and the regiment abroad to have a tour of ten years; each regiment at home passing from the lower to the higher establishment after five years thereon.

Thus, taking a brigade of Dragoons, *e.g.*, say, the Royals, Greys, and Inniskillings, the Royals being sent to India, the Greys and Inniskillings remain at home, the former for five years on war footing and the latter with existing cadres of officers etc., on a lower establishment and devoted to training men and horses for the Royals and Greys. After five years the Inniskillings change places with the Greys on war footing for five years, they then proceed out to relieve the Royals in India, who return home, whilst the Greys come into the war footing for five years, and so on, the regiment proceeding to India being the next on the roster irrespective of its then establishment, which would be raised if necessary to the required numbers in men.

This scheme, it will be seen, provides for ten years' service in India and twenty years at home, varied by three regiments on the war footing

[1] The Dragoon, etc., brigade of four regiments would supply the extra one in South Africa and one in India, leaving two still at home—one on higher and one on lower establishment.

being in South Africa. This would provide always at home three regiments of Dragoons and one, *at least*, of Lancers, and three of Hussars, absolutely ready for immediate service both in trained men and duly qualified horses, seven regiments in all; and behind these the cadres of nine regiments ready to take up the Reserves if called out, and to train and push them to the front; and available also, thus augmented, of being taken for service themselves with the briefest preparation as extra regiments.

Our experience for many years past, since the Crimean War in fact, has shown that for the minor wars we are most frequently engaged in a force of seven British cavalry regiments, always ready, would amply suffice; whilst for big wars such as that in South Africa we command (if we eliminate the three regiments supposed to be now necessary in peace-time in South Africa), ten regiments[1] so circumstanced with nine first-class training schools, themselves capable of immediate expansion into efficient regiments when their over-age horses, etc., have been weeded out and replaced from the horse reserve at the back of these.

There is no possible system which is not open to many grave objections—and many purely sentimental ones. What we require is as much cavalry, *absolutely ready to embark*, as we can contrive, and training schools for this, which have the complete organisation for the work and can turn out efficient drafts for India. If this can be done without shattering regimental traditions (and I see no reason the scheme I have advanced should), it would appear to be a solution to a great difficulty. There are troublesome details, no doubt, which I have not touched upon, but hardly any, I imagine, which could not be adjusted. The regiments on lower establishments would practically be no worse off than the bulk of home cavalry regiments have been in the past under the system of training their own recruits and horses whilst on varying degrees of depleted strength; the war footing regiments would, I believe, be immeasurably better off. These latter should be quartered where opportunities for exercise on the highest scale exists in Great Britain and Ireland; they would attend manœuvres regularly, and, in fact, work at high pressure as near perfection as may be. The feeding links would perforce have to be quartered in many places suitable only for the training of the young material; they should, however, be placed where full opportunities exist for this work, *i.e.*, where regimental and squadron work can be efficiently performed, and reconnaissance in its details, at all events, taught to the men.

Such is a brief outline of a scheme which I have not seen advocated elsewhere, though it may have been, and which I think promises at least some distinct measure of improvement on past methods. What, however, I would hope to see is the amplification by degrees of the scheme so as to embrace, at least, another brigade of light cavalry to be quartered and trained in South Africa and available, of course, for service anywhere.

[1] Includes two regiments Dragoons out of brigade of four.

Infantry.

In March, 1899, Mr. Wyndham presaged the raising within a short time of the four new battalions required to complete the nine battalions additional authorised in 1897, making in all 157 battalions of infantry and Guards, of which 82 were abroad, namely, 52 in India and 30 at other foreign stations. The balance, viz., 75 battalions on home service, would sufficiently meet the requirements for drafts to battalions abroad without unduly straining the system. Under the Colonial Office were 21,000 black troops, and under the War Office close upon 10,000 coloured troops, or 140,000 British infantry and 31,000 natives, irrespective of the Indian Army.

The First-class Army Reserve on 1st January, 1899, numbered 78,798, and on 1st October 81,000.

Behind this was the Militia Reserve, 30,000, and the Militia itself, 103,647.

The Volunteers, 264,833.

On 20th October, 1899, Mr. Wyndham again addressed the Committee of the House on Army Estimates. He says:—"If our system is worth a rush, it must enable us to send an expedition without depriving our homes of protection. I go farther: we cannot be satisfied unless we can despatch such an expedition without destroying the machinery for creating, or dislocating the machinery for distributing, the units of which our Army is composed. The Army of to-day, in short, is not only the Army of to-day, but the machine for creating the Army of to-morrow." This was spoken at a time when, war having been declared, the Government and the nation at large were satisfied that 75,000 troops would not only render secure our Colonies in South Africa, but suffice to overturn the territories of the two Republics. Hence the complacent satisfaction with which the War Minister pointed to the marked success attending the mobilisation of an army corps and troops for the lines of communications. Much, too, was made of the power to obtain ten battalions of infantry, from India and the Mediterranean chiefly, without "dislocating the reliefs or paralysing the home army as a creative and feeding machine." 25,000 men were called up from the Army Reserve, and over 21,000 responded, not a single man, we are assured, was at that time sent out who was under the age of 20, and all the men were practically trained soldiers.

Mention was not, however, made of the fact, which became public property shortly afterwards, that considerably over one-half of the strength of many of the battalions sent out from home were Reservists. Indeed, when Mr. Wyndham admits that 26,000 were men serving with the colours out of 47,000, the total at that time ordered out, the number of battalions being 33, or, in round numbers, somewhere about 33,000 men, and when we deduct the proportion of men in their colour service of the cavalry (8 regiments) and the artillery (18 batteries) it will be seen that the 26,000 will be reduced as regards infantry to somewhere

about one-half of the total numbers in all battalions, and I have purposely given the estimate for the infantry at outside figures.

After the despatch of this army corps in October and November, 1899, the Army Reserves still available numbered some 56,000 men.

The battalions requiring fewest Reservists were naturally first on the roster for mobilisation, and were then on the average somewhere about half strength in efficient men with the colours. Admitting all the remaining Line battalions were similarly well off, which is far too generous an estimate, we could have further put into the field without drawing outside the Army Reserve another 100,000 men. As a matter of fact, however, the last battalions sent out were almost entirely composed of Reservists, and, I believe, so far as infantry was concerned, that we could barely have mobilised another 75,000 men relying on the Reserves alone. But the 30,000 Militia Reserve came in, and although a thing which would have been held to have been beyond the pale of rational supposition a few months previously, even inexperienced Volunteers, and absolute recruits of a few days' service were collected in their thousands and sent out to swell the ranks of the Army in South Africa. The Militia proved its excellence, and, for their opportunities, the Volunteers were a marvel of soldierlike qualities, and very soon dropped into their work.

Mr. Wyndham quotes the "impressive words of the Commander-in-Chief" (Viscount Wolseley) as follows:—"No amount of wealth, even when supported by patriotic willingness to enlist, can buy discipline, training, and skilful leading."

These are precisely the essentials which no one will expect to find in the undisciplined, untrained recruit, or in the lad who joins his corps for the first time on active service, fresh from the crammer or the school. The unexpected turn of events in South Africa, which so completely overturned the edifice of self-congratulation on the smoothness with which 75,000 men (a hitherto unprecedented effort) had been placed in the field built up by our ministers and the nation itself, has taught us, or should teach us, a valuable lesson for future guidance. We had to send 234,000 men and 170,000 horses across 7,000 miles of ocean instead of a mere 75,000 men with which we had flattered ourselves our victory would be assured.

Is it possible we may make a similar miscalculation in the future with possibly much more serious results? At all events, we shall have no right to forgive ourselves if we do!

If we must have men, and the men must have discipline, training, and skilful leading, surely it is a poor policy for the nation to burk the fact. If we cannot obtain the numbers we want upon terms our taxpayers are prepared to subscribe to, then it must come to conscription, even of a modified description, or the welfare of the Empire be imperilled. We have been called "a nation of shopkeepers," and unquestionably our greatness amongst the nations of the world is due to our wealth. Police our possessions insufficiently, relapse into economic unreadiness in order to hoard our wealth to the utmost, and we find the false policy must re-act on the prosperity of our peoples. With what millions of money has our

experience in South Africa been purchased! Yet it is a cheap lesson if it be only taken to heart and our land forces put on a footing more numerically proportionate to the possible future calls upon them.

We have seen the value of a citizen army of Volunteers, highly trained from youth upwards to the use of the rifle—possessing only the discipline arising from self-control and self-respect—untaught in the higher military sciences, and content to fight without pay or honourable distinction in return for their services. Is the Briton one whit behind the Afrikander Boer in such sterling qualities? Is he ashamed or too lazy to add his name to the list of civilian Volunteers ready to sacrifice even in a small way something to the defence of his country? Every boy at school should, in my idea, be instructed in rudimentary drill and taught how to aim and shoot with a rifle. At manhood every able-bodied citizen whose calling would not exempt him in other countries should be obliged to serve in one or other of Her Majesty's forces, in fact, to use an Irishism, "Volunteering should be compulsory" in Great Britain, or some substantial equivalent for actual service should be exacted.

No effort has of late years been spared to bring the Line battalions and their Auxiliary links, the Militia and Volunteers, into closer union. This war has, I believe, effected very much in this respect, but more can still be done. Provide all Volunteers with rifle ranges, even if it be impossible to give them long ranges to practise at, science could make shorter ones safe, and much good can be accomplished by practice even at moderate distances, using smaller targets. Encourage the Militia in every possible way; it has proved itself worthy of its traditions and is composed of most excellent stuff.

A veteran reserve should be formed of all soldiers who have passed through the Army reserves, such men should not be liable to service out of the country and should receive a small retaining fee annually. This might be extended also to the Militia. Instruction with any newly-invented rifle should be made one of the conditions of their service, and ample reserve stocks of rifles and a liberal allowance of ammunition made available.

The service rifle should be adapted for rapid charging of the magazine. The process of re-charging the magazine of the Lee-Enfield is too cumbersome for men to undertake it when under hot fire. It has proved important for a few men to be able to deliver such a rapid fire as to mislead the enemy regarding the numbers producing it. Coupled with the concealment consequent on smokeless powder, the best troops will frequently be kept back through uncertainty as to what they have to face and where the fire comes from. The Boer Mauser, loaded from above out of a "clip" containing five cartridges, is simplicity itself for rapid loading in action. The German rifle has a still better invention, loading from below. Fancy the folly of our having a rifle the magazine of which cannot be used at manœuvres, etc.

The lines upon which the organisation of our infantry has been designed, and its improvement from time to time since the days of Lord

Cardwell's first great reforms, has proved, I think, an unqualified success, far more so indeed than we had any reason to expect. The strain put upon the system last year was a terribly severe one, far beyond what it was expected or designed to meet, and although the machinery was "dislocated" as it was bound to be when over-worked beyond the pressure contemplated as the highest it would have to bear, yet it was patched on the moment in a really wonderful fashion; and the very fact that, despite the dislocation, it has been kept working through an abnormally protracted campaign, has unquestionably astonished Europe even more than ourselves, and has at least gained for our war-like capabilities in an emergency, the honest respect of the world at large. It would be foolish therefore to urge for a disruption of a system which has proved to be so very much better than its critics in and out of Parliament gave it credit for. Let us rather progress steadily on the general lines, improving yearly in those matters which call for reform, steadily working to place the bulk of our able-bodied population, both at home and in our Colonies, in a position to render us valuable aid, as they have done lately, in any future tight place in which we may find ourselves.

It is a fatal error to overthrow any structure like that of our Voluntary Army in order to experiment in new directions. What we have to do is to enlist the sympathy of the nation at large, continue to better the position of our soldiers, and to give them an improved social status in our country. Encourage those who are willing to help in the work of finding good employment for men of good character when they leave the colours, and promote to the utmost a spirit of military pride in our ever-increasing population.

Mounted Infantry.

Coming after the infantry of our Army, we shall do well to consider the lesson so plainly taught us by the Boers as to the value of this class of troops. There will be no lack of writers now who will plump for mounted infantry as *the* infantry of the future. But the cost of upkeep and of mounting it will preclude the infantry being mainly a mounted force in any Army, save one like that of the Boers, where all the men are horsemen from childhood, and the country produces and feeds unlimited numbers of suitable animals almost free of all cost.

But, in my opinion, mounted infantry we must have, and that not merely improvised levies shaped together at the outbreak of war, but properly trained and permanently organised mounted infantry. Appreciating as I do the many difficulties and the expenses attending the permanent upkeep of any considerable force of this branch at home, I am not prepared to advocate it for the home army. It seems, however, a possible solution that the garrison, which must be a considerable one for a good many years to come, at all events, of South Africa should be *almost entirely* one of really "light" cavalry and of mounted infantry. No one can question the fact that mounted troops are *the* troops for that country—of infinitely greater value than ordinary infantry could be.

There we have an ideal locality for breeding at very low cost the exact type of hardy animal that we require for mounted infantry purposes; there, too, is an ideal country for training your men, and acquiring in course of time an admixture of our new subjects, whose adaptability to this work has won our admiration.

Here then we find the grand opportunity for placing the most suitable class of garrison to keep the peace and control the immense population of Kaffirs, whose presence will, I believe, be a very real menace for many years to come, whilst training for the service of the Empire a most important auxiliary to the cavalry and infantry of our Army, one which is capable of influencing modern campaigns to a hitherto but little appreciated extent. At least two-thirds of the normal garrison of South Africa should be new regiments of light cavalry and of mounted infantry.

Also, I am convinced that in South Africa we possess perhaps the most valuable breeding ground in the Empire for military horses, especially those for light cavalry, etc. If the British Government will only now acquire some of the enormous tracts of pasturage which will be in the market after the war, it will, I believe, repay the State a thousandfold. By careful and judicious breeding from the right class of stock and imported mares, the finest supply of horses will be available, and at a very low cost, whilst the industry, one especially suited to the Boers lethargic disposition, as a landowner, will also help to keep the population from suffering through outside competition—a state of affairs which will be inevitable if the Dutch farmers have to rely upon the crops they grow. In the Orange River Colony, and in a great part of the Transvaal, the dreaded horse sickness is almost a myth, and considering it is epidemic when it does come, and the Boer is too apathetic to enforce measures of prevention of its spread, it is probable that outbreaks may be localised or prevented by stringent measures taken in time when bad seasons do occur.[1] The South African pony has wonderful endurance and great power for his size, and in many parts really good-sized useful troopers are to be met with. The Boer had no use for animals much over fifteen hands, but I do not doubt but that we could breed larger horses for our Army purposes without any difficulty, and persons well versed and experienced in horse breeding in South Africa have endorsed this view.

The raising of 12,000 mounted men for the South African Constabulary for duty as district mounted police in peace, and as a military force in war, need not absolve us from taking advantage of the chance to garrison our South African possessions with Regular mounted troops. This mounted force of 12,000 men, whose engagements limit their service to British South Africa, will, however, enable us to withdraw a large proportion of the Imperial troops if, and whenever, required for service elsewhere, without leaving our South African possessions unguarded in this respect.

[1] Dr. Edington now claims to have arrived at a perfect antidote for horse sickness by a process of gradual inoculation.

Railway Corps R.E.

I am possibly speaking without sufficiently full information on this matter, when I urge that one of the lessons we should take to heart from the Boer campaign is the necessity for having a much larger force of fully-trained officers and men to undertake the military management of railways in war. I have been told that on the main line up to Bloemfontein, and especially towards the confines of Cape Colony, the traffic, enormously heavy on a single line of railway with a single line of metals, became in a chronic state of congestion. Whether this was really unavoidable under the conditions then obtaining, I am not in a position to say positively.

I can, however, state that great numbers of officers of every grade and degree of ability were employed, most of whom had, I believe, no better acquaintance with the management of railways than they had of commanding a steamship. Under them were civil railway employés, who, however, were not entrusted or empowered, and probably could not well be, to organise and arrange the traffic. Consequently, it was no uncommon spectacle to see a dozen or more trains all one behind the other inside and outside a station, at which alone there were facilities for trains to pass one another, and how these daily entanglements were extricated and the pressing services sent ahead of the goods traffic often was a wonder to the railway officers themselves. Someone once told me that, at a station where in peace six trains each way were despatched within the twenty-four hours, two or, at the most, three, could be cleared through. If one railway staff officer happened to know his job, it was 100 to 1 on most of the others up or down the line spoiling all his calculations by their inability to work in with him. The orders and counter-orders for the despatch or deflection of trains with troops and stores were flooding in on all the stations, and nobody but a properly trained railway officer had much chance to keep his line clear and traffic passing smoothly along. The railways having to work under military control entirely, it is manifestly advisable, if not really necessary, to have a full staff of trained railway staff officers and rank and file under them, to whom the knots into which the smallest hitch ties up the traffic under the pressure of war are comparatively simple to untie. Officers might be trained, as also men under the traffic department of any of our great lines at home.

The Army Service Corps.

The performance of this important branch of our Army organisation has, I believe, for almost the first time on record earned the unstinted praise which so very properly belongs to it.

Augmented by attached officers from every part of our Empire, the Army Service Corps has proved itself as nearly perfect as is possible. The huge Army has been most wonderfully supplied with everything it needed, and this for a great part over very inferior roads, and at great distances from the railway bases. But it has been sorely undermanned,

and a very large and undesirable civilian element has had to be attached to it at very high salaries and not always to the satisfaction of the Corps itself. The situation explains itself when we again hear Mr. Wyndham on the subject when speaking in March, 1899:—"For the three army corps composing the field army, it is calculated that, in round numbers, we need about 12,000 men in the Army Service Corps. But at this moment, excluding reservists, we have 3,302 men in the Army Service Corps at home." And Mr. Wyndham announced that, whilst asking in those Estimates for an additional 40 officers and 1,000 men for the Corps, they proposed to ask for a vote that year to enable them to raise half that force. He assured Parliament, however, that with the Reservists the Army Service Corps had "enough men for the first line of two army corps in the field"—we can fully appreciate, therefore, the inadequacy of the Corps as it then stood, to meet the requirements of an army of 250,000 men.

Here, as in all other branches of the Army, the South African War has punctuated the necessity for arranging for the expansion of the Corps for service in a great war without having to draw upon the fighting branches for officers and men, or employ civilians largely in transport duties. If the transport in South Africa has been well run, it has been at an appalling cost. It seems probable that the transport contractors to Government will have netted an almost unprecedented sum out of the very protracted operations, considering the indemnities paid for overworked cattle, in addition to the full hiring price, which was very heavy per day. The transport belonging to Government and horsed with Government mule is simply infinitesimal compared with the hired ox-transport necessary to complete the requirements of such an army in the field.

On no corps has the campaign against the Dutch Republics been more severe as a test than on the Army Service Corps, and, despite minor drawbacks, inherent in every branch of an Army, the Army Service Corps has held its own, a proof that its organisation was carefully worked out previous to the day of action.

The Royal Army Medical Corps.

The Royal Army Medical Corps is too important an adjunct to the efficiency of an Army to be omitted in the consideration of its organisation.

On the whole, the working of the medical department was satisfactory, although the hospitals were in some instances undermanned. It would be impossible to avoid cases of complaint—and in some instances just complaint—but it seems that circumstances were more to blame than individuals. Unlike the combatant branches, it is possible to augment the Royal Army Medical Corps by civilians, whose acquirements are in most instances of an entirely satisfactory standard. But here, again, as in combatant auxiliary corps raised for service, the want of comprehension of Army methods and procedure, and tendency to indiscipline amongst civilians temporarily endowed with Army status, caused occasionally, I fear, a certain friction which did not always tend to smoothing difficulties.

On the whole, however, I believe the consensus of opinion will endorse the view that, considering the unprecedented magnitude of the call upon it, the Royal Army Medical Corps performed wonders in this campaign. We may gather from the numbers of doctors coming forward to augment the Corps for the time being that military service is not unpopular in itself, but that the great paucity of eligible men who present themselves for commissions is the outcome of some widespread distrust of the prospects and position of the Army doctor. We heard much at one time about the undiluted military title attracting men to the Service, but, now they have got the purely military title, they do not seem satisfied.

It is important to keep the corps up to its full strength if harmonious and smooth working in war is to be ensured. The heavy proportion of foreign service, where officers are worse off than at home, the small prospect of monetary advancement compared with that of hard-working and clever medical men in civil life, and the inclination of the medical schools to boycott the Army with a view to enforcing any demands desired by the profession for its members in the Service, are apparently at the root of the difficulty.

II.—Training and Equipment.

The principal lessons under this heading, which have been taught by South African experiences, refer chiefly to cavalry, mounted infantry, and infantry forces.

1. *Cavalry.*—Taking first the cavalry, we have learnt that the training of the past in reconnaissance duties has been faulty and based upon ideas which the opening phases of this war rapidly dispelled.

Whereas it has been a common thing at peace manœuvres, etc., to see cavalry scouts ride openly to within 500 yards of infantry firing at them, and often closer, it has been demonstrated in South Africa that a rifleman can keep almost any number of scouts or groups at a distance, and that they seldom adventured themselves when once fired at, even at ranges like 1,200 yards and over. This has been due to the accuracy and rapidity of rifle fire at these long ranges, but more to the impossibility of locating it—men could not tell if it came from a kopje 1,000 yards distant or from the stone kraal only 300 yards away. But, conversely, in cases where our patrols have been "held up" by the enemy and sought good cover, the Boer has contrived to stalk them to close ranges without exposing himself, and this points to the possibility of our mounted men being trained by proper methods to a system of scouting which in the future will alone give them any chance to obtain reliable information regarding positions, numbers, etc., of the enemy. It is a painful fact that the bulk of the information in the field in this war has been gained by the use of mounted Kaffirs; had it not been for their highly-paid services, availed of also, no doubt, by the Boers themselves, we should have been practically without intelligence of the enemy's movements.

Much more time must be devoted in the future to reconnaissance by cavalry, and in the place of patrols boldly riding up to one another in the open or down roads they must be taught to scout in such a manner as not to be seen. A patrol seen within 500 yards by dismounted men with rifles should be considered as "out of action"—in this way alone can the men be made to respect the value of rifle fire in peace, as a training to be prepared for it in war. How often have I heard doubtful figures on a distant skyline disposed of by the remark, "Oh, those *must* be our people; the Boers would never be visible like that," a fact which was perfectly correctly stated. An intelligible system should be introduced for the universal training, on similar lines, of all cavalry; at present each unit appears to have its own special fads, without which it does not consider itself perfect in detached duties; when working together, men of different units cannot work in unison. Reconnaissance in our cavalry has always been conducted more with a view to complying strictly with the theoretical plans for ensuring touch being kept between all parts of the force, than with a view to seeing that each group in the chain carries out the grand principle of seeing and reporting without being seen. In South Africa we heard complaints on the one hand of the difficulty of moving at all without exposing ourselves, and in the same breath of the futility of finding out what the Boers were at, because they never allowed themselves to be seen. Yet the country was the same for both sides. Our men preferred to ride on the open veldt, whilst the Boer would be moving away down an unseen donga. Knowledge of the country had something to say to it no doubt, but not everything.

Why should Yeomanry, and Colonials even, gallop up to a hill crest lined by Boers—lose half their party in one volley and come down with a hail of bullets following them. One scout ahead might have exposed the trap, run no more risk personally than he did amongst five or six others, and saved the loss of several horses and men. Yet these blunders were of constant recurrence. Parties on patrol would ride up to Dutch farms, dismount without any look-out, get coffee and refreshments, and converse with the women for half-an-hour, then mount and ride away in a bunch without any precaution and be cut up by two or three Boers who had been lying in wait for them since they saw them go to the farm.

Imagine commanders having to publish in orders that all patrols should invariably move with charged magazines. This was done to the writer's knowledge more than once, due to the fact coming out that scouts and men on patrol duty habitually neglected to have their rifles loaded. The writer has himself found men in presence of the enemy during a march riding along on the flanks of a column at a mile or more distant with absolutely empty rifles. On the other hand, rifles captured with Boers, and a very large percentage of those handed over at surrenders, were found fully charged, showing that habit with them caused the Boers to leave their weapons loaded even when marching in in bodies for the purpose of surrender. Of the shock tactics the South African struggle has taught us no lessons. It has taught us,

however, that, even with the Regular cavalry, horse management goes to pieces on a campaign, and that much requires to be done to establish a common-sense care of the horse. I have seen big men on undersized skeleton ponies, carrying a heavy saddle, sword, lance, and carbine, cloak and water-proof sheet, wallets stuffed with anything, probably, which it pleased the soldier to stow there, and a third of a sheep or 20 lbs. of firewood hung about in addition. What a ridiculous spectacle in a cavalry which at home is the most strict in the world as to turn out! I do not say such things were universal, but I have seen them, and when officers tell one that they were completely remounted less than three weeks previously, and that most of their men are now constrained to walk and lead their horses, too "cooked" and emaciated to carry a man, surely it points a very useful lesson in our Army system.

Lord Wolseley has said in a comparatively recent speech (October, 1900) that no less than 170,000 horses had within the year been sent to South Africa! These were, presumably, independent of large local purchases and captures in South Africa itself. The total of mounted troops has never, I believe, exceeded some 30,000, which, without counting the South African remounts, on which the Colonials were principally mounted, would give 5 horses per man, and 20,000 horses over for sundry other services such as artillery, etc. Personally, I know of cases where men —as I was assured by their own officers—were remounted from three to six times within four months.

Were the 170,000 horses for the most part unsuitable rubbish, or was the cause of this terrific waste of horse-flesh a lack of system and forethought in working and caring the animals? Large numbers of the horses, the Argentine horses more particularly, were rubbish—this is undeniable —but the bulk were animals well fitted for ordinary soldiers' work. The solution is therefore pretty clear—namely, that want of system and good management had most to say to the gigantic slaughter of horses.

May I refer to two items by way of examples? Some Yeomanry corps thought fit to discard the horse blanket under the saddle because lack of instruction and supervision had led to bad folding, and thence to galls on the horse. These preferred the Numnah. The animals were English or Irish bred horses brought out from home, and it was only to be expected that severe work, scanty food and no time to eat it in, coupled with heavy cold rains and followed by bitter nights, without the covering to which they were accustomed, pretty well killed off all these horses.

Instead of matters improving with time and experience, it would appear things did not do so. For months after the first few in South Africa, mounted troops were kept in the saddle for tremendous periods at a stretch, and throughout a long day from 6 a.m. to sundown I have known perhaps 75 per cent. of horses unfed (unless they chanced on a farm stocked with forage), because the nose bags were worn out or lost and had never been replaced. It is the little items such as these that are the all-important ones, deciding whether a mounted force keeps efficient or falls to pieces. If the country wants to know the secret of

the wreck of its cavalry troops in South Africa it has to go little further than what I have stated. If in future wars our mounted troops are to require re-horsing on the average every two months, it is high time that we had something better than 14,500 registered horses as a reserve—this, however, was the reserve we had at home in the spring of 1899.

But whilst I am aware that the Regular cavalry became constantly inefficient through losses in horse flesh, its work was, at times at all events, of the most severe description, and its numerical paucity caused practically the whole of it to be kept constantly moving in wide turning movements and covering duties. On the other hand, it might have been expected that its internal system and organisation would have minimised the damage to efficiency caused by hard work. Field-Marshal Lord Roberts published more than one Army Order directing attention to the want of care of their horses in mounted troops.

The Colonials, Imperial Yeomanry, and Mounted Infantry all had much hard work also, but, as a whole, it was work wherein individual care and good internal organisation would, I think, have saved much of the loss which, since these arms were three times or more the strength of the Regular cavalry, was proportionately great amongst their horses. But what could we expect? Yeomanry officers have freely told me that the worst horse-masters amongst their men were hunting-men, men who had lived on horseback all their lives, but who having had good grooms had not the faintest notion of caring for their own mounts. It may seem odd, but such I was assured was the fact.

Again, whilst amongst the Colonial corps there were numbers of men who, with previous experience at their back, and the advantage of rough colonial life, were first-class men at scouting and detached work, there was a large admixture of those who did not understand the meaning of discipline, and whose attainments were not on a par with any trained soldier. They had to be humoured because they were Volunteers from the younger branches of our great Empire's stem, and if they were good riders they were entirely reckless as to their horses—if they killed them or worked them to a standstill they commandeered, even at the expense of neighbouring corps, to re-mount themselves, and turned loose the skeletons on the dried-up veldt to die or recover as they would. The Colonials must have accounted for a huge number of horses, or probably the horses they lost have never been accounted for at all, and never can be now. As might have been anticipated, the systems of working and interior economy, both amongst the Colonials and the Imperial Yeomanry, were as varied as the corps themselves. For want of a properly worked-out plan many of these Volunteer troops reconnoitred on a system of moving in extended files over an enormous front with no adequately formed supports and with consequently the maximum of labour on the horses for the same result that would have been obtained by the extension of a few groups with a scout or two. This assisted to wear out the horses.

General and other officers, not always much used to having mounted troops to any extent under them in peace, forgot, or failed to realise, the magnitude of the tasks they sometimes allotted to the overworked mounted

units. One or two such occasions practically reduced the units to absolute inefficiency. I have seen so-called companies (or "squadrons") of Imperial Yeomanry detailed as such for important cavalry duties which paraded from 30 to 40 horses all told! I doubt if the British public realised all this when they read of the unsuccessful endeavours of some Yeomanry "battalion" mustering the strength of a service "squadron" of cavalry to do the work of a battalion at proper strength.

I recall one occasion when the rear of a convoy of wagons which took upwards of 4 hours to cross a drift was protected, as I was told at the time, by a "squadron" of Yeomanry, but which when I came to review its dispositions as the enemy were about and the drift blocked, turned out to consist of an officer and 8 or 10 troopers as reserve with 8 men as rear parties in 3 or 4 groups! On one occasion a communicative N.C.O. with the baggage column told me that his company of Yeomanry had 40 dismounted men or used-up horses and about the same number of effectives out covering the march. Another company, whose dismounted men he had charge of also, had, he said, about the same, and 30 men out with the mounted lot. How much of all this was due to the lack of "discipline, training, and skilful leading, which no amount of wealth, even when supported by patriotic willingness to enlist, can buy," [1] the country can ascertain if it chooses to inquire of independent witnesses.

Whether the enrolment of Volunteers lacking these valuable qualities, raised on an emergency, and necessarily controlled with politic gentleness such as the situation renders compulsory on those who command them, is obtaining the best value for a nation's money is a question I think beyond debate. The gallantry, fine physique, and willingness to face all hardships and dangers without a grumble, displayed by the Imperial Yeomanry, gained the admiration of every soldier in the Army. The marvel was that under the conditions affecting them when they landed in South Africa they should have so readily conformed to the unaccustomed work of campaigning, and in so short a time improved into the troops they became. But it would be fulsome flattery, and disregarding facts, were anyone to urge that they would not have been the better throughout of that training in details which counts for so much and which cannot be acquired by the cavalryman or mounted infantry soldier in a day. Probably quite 50 per cent. of the efficiency of the Yeomanry was deducted from the sum-total by the shortcomings due to lack of previous training and systematic instruction.

The moral of all this, as deducted from our late experiences, is that if we want to obtain our money's worth in our mounted branches, in the future, we must train them more highly, and with due regard to modern requirements, especially in the detached duties of reconnaissance and covering duties; we must have a considerable increase in the establishments, and, as far as is possible, we must give them the necessary training, both for men and leaders during peace. Only on these conditions will they be a really useful and economical force when war breaks out.

[1] Lord Wolseley's speech.

Before quitting the subject of the mounted branches, something should be said as to the officering of them. To be really valuable in these days the officer of cavalry must have large practical experience, a highly trained knowledge on all matters connected with his profession, and be particularly gifted in resource and energy. Money cannot buy these things. I regret to be obliged to agree with some writers who have expressed very strong opinions on the point. The expenses of cavalry officers should be cut down, and the cavalry branch made possible to men with ability who are now kept of it by their lack of means to meet the heavy outlay entailed by serving in it. The pay will probably never be increased, and I greatly doubt if such a course would improve matters, since officers would be expected to do more with it if they had it. But surely all officers might be given the option of accepting their horses used as chargers from Government free instead of purchasing them as at present. Every useless extra garment in uniform should be abolished and a plain undress and handsome full dress alone maintained, with, of course, a moderately priced mess uniform.

If we could arrive at never allowing our officers to appear in any costly outfit, except when at public social functions, or on the highest class of parades, which are comparatively rare occasions, very much of the wear and tear of costly uniforms would be put an end to, and economy of importance effected. It has always struck me that there is no reason why the War Office should not have a first-class branch of the tailoring department under Pimlico, established to supply well-cut garments of approved patterns to officers at as nearly the cost price as possible. This would enable young officers on joining to be properly outfitted at a reasonable figure (a very great consideration with many parents) and would assist officers who desired to be economical to keep out of tailors' hands and save unnecessary outlay. Payment would of course have to be cash, or a charge on the officer's pay. Further, it would be impossible, or should be made so, for commanding officers to name firms as "Regimental Tailors" and practically compel all young officers to go to them for outfits, and sometimes be in debt for years for the absolute necessary uniform clothes to appear smart and clean as an officer should on all occasions. The same may be said for saddlery. A contract to supply officers on fair terms could be come to with some of the leading saddlers for uniform saddlery only, and the outfits and articles to be bought through Government or on a Government order for cash.

Without question, the ordinary furniture and fittings for a gentleman's room should be supplied free in every barrack and quarter at home, the smallest possible percentage per annum being payable by the officers to cover damage and depreciation by fair wear and tear and to replace or repair articles when worn out. This would not prevent officers with means furnishing as they pleased, but it would obviate the present expenditure on the carting about of tons of officers' furniture from station to station when units move in relief, and prove a real boon to the poorer men amongst the officers. Similarly all regimental messes should be furnished with not only bare tables and chairs, but with the other ordinary necessaries of the club,

sitting and dining rooms, and of those of the ordinary gentleman's house. Are not these things worth the public outlay if they be the means to the end of producing a better class of men for officers, or rather, I would put it, of opening the door to suitable candidates who are at present debarred from entering for lack of the necessary means, or who, if they do enter, so often have their career spoiled by the load of debt incurred which makes the profession one continual struggle and distracts their attention and energies from professional work? No man hardly can devote himself wholly to his duty and his work who has continual worries wearing him down. There are few worries a man feels more keenly than those of inability to meet his mess bills and keep pace with his fellows in a regiment, and the better man he is the more accutely he feels his position.

2. *Infantry.*—It has been pointed out by many writers of note that the war in South Africa has opened our eyes to the necessity of a very much higher training for officers and men of our infantry. It is only to be expected that many shortcomings would be brought to light, but this may be anticipated in any modern war. It has been said that our officers, whilst unequalled for pluck, are deficient in military attainments and capability for adjusting themselves to circumstances in war. This may be in some measure a fact, but if it be, I have no doubt whatever that our military system of training them has had much to do with this defect. Most of them have learned from their youth up that initiative in field manœuvres will probably let them in for reprimands, and a young officer who takes his own line seldom meets with support, much less encouragement, from his seniors. We have had for years a system which, slowly developing from the rigid "red line" of Crimean days into the present extended one, has always been a *line* more or less rigid in all peace training, degenerating under the stress of actual service conditions into the worst possible formation wherein to meet savages who charged home regardless of losses—witness Islandula—and a go-as-you-please skirmishing line in the South African War. The lessons of the Zulu War and of the various Soudan Expeditions brought us back into squares and solid line formations—at Aldershot and elsewhere we adhered to the various forms of "attack formations" from time to time evolved by our best theorists out of what might be expected to occur in actual modern war—but based on no practical experience. There are sound military authorities even now, I believe, who still adhere to the theory that in the future attacks must be pressed home by dense bodies of men despite all losses, and that this alone will win battles in the future.

Such is not my opinion, although I could have argued as they do before I had the opportunity of seeing British infantry advance under modern magazine rifle fire. Any body of men sufficiently brave may, with heavy losses probably, but with success, advance for a short distance, whilst still fresh, over a fire-swept zone, but when they have anything between 1,200 and 2,000 yards to cover, losing heavily all the while, and at a steadily increasing rate as they draw nearer their enemy's positions, I do not believe human nature will carry men through it—or only a very

few. Moreover, provided the enemy be properly entrenched with cover from view, the smokeless powder reveals nothing for advancing troops to fire at; their fire is largely chance, and men who can see nothing to aim at cannot be blamed if they shoot erratically under such circumstances; unless their fire be aimed, and that at the proper place, it will have little effect in causing an enemy with any head cover whatever to diminish his fire. Further, it may be true that we are over-sensitive about our losses, and will not run the risks necessary to storm positions in masses as Continental troops might try to do, but where we have tried it in this late war it has most frequently ended in very heavy losses, and either a check or a very small result if successful.

What we have to ask ourselves is this, Had the Boers been Germans trained to hold positions with modern appliances fully in use and ready to meet a final assault with the bayonet and fresh reserves, would our assaults, which were successful, have proved actually so in such cases? It must not be forgotten that the Boers never once stood their ground when they found our men closing on them—ere we were within 400 yards they had fled, except perhaps a few isolated groups, and our troops arriving on a position they had charged met with practically no opposition. All their losses—heavy ones—were caused by the Boer rifle fire whilst still a long way off. I have read Mr. Winston Churchill's graphic account of the fight at Pieters on the way to Ladysmith; it gives an unstinted mead of praise to our gallant troops, but it also shows they could not cross that last few hundreds of yards whilst the enemy stood firm. I take it that if any troops could have done so Buller's would have then.

One could multiply instances innumerable from this war in support of this argument.

I, therefore, believe that the battles of the future must be fought in the very thinnest formations. The defence can now hold extents of front we never have deemed possible with comparatively few men, and can afford much larger reserves to meet any final attack. The attacking force must conquer by turning movements beyond the flanks, rendered still more difficult by reason of these reserves acting in interior lines, and by the length of time occupied by the action necessary in consequence of the long range of effective rifle fire, which gives opportunity and leisure to the defence to form a new front to meet them. Here I believe mounted infantry will be all-important, and since the attack becomes a series of minor battles fought out quite outside the control of the generals or even of commanding officers in many instances, it becomes of the first importance that every company officer should possess the power of directing these near him with the best chances of success, and that the N.C.O.'s, and even the individual soldier, should possess that self-reliance and confidence so necessary to their working in unison, which are only to be obtained by the most careful instruction and encouragement to think and act for themselves without being continually checked by a senior once they are launched into the attack.

We must have far less time spent in the battalion drill and attack formations of a battalion on a flat plain, so often seen of a morning at

any of our military stations. Company officers must be encouraged to exercise their companies and entrust its direction to their N.C.O.'s and under them in parts to the most intelligent of the privates. The place from which to judge the value of a company attacking any given feature is not with the company, but from the enemy's point of view—if it can be seen advancing across the open at very regular intervals between files and with the precision we love so dearly, so much the worse will it be for its chances of success. What our infantry want is not the courage to drop down by hundreds in their ranks, but to be able to advance taking the utmost advantage of every dip and inequality, and exposing themselves the shortest possible time when moving forward. I have seen lines of British infantry marching steadily at the slowest pace under a rattling Mauser fire, an odd man dropping hit, but the rest going on as if at drill. They were in very thin formation—successive lines at intervals of 10 paces or more between the men and 200 or so distance between the extended lines. When the fire got really warm—too warm for anyone to feel comfortable, they would lie down—any man moving became then the target for a hail of bullets—and this seldom so close as 1,000 yards from the enemy. I have seen two battalions thus, opposed by perhaps 50 Boers, but one could never tell either the true numbers or exact positions. What has occurred to me is, What would be the effect of the smart and continuous fire if it were multiplied say ten times in intensity and you had four battalions on the same front instead of two? Yet 3,500 infantry would not be a small proportion wherewith to attack 500, even if really well posted. But the result would be the same as it was in the smaller case, those directly under fire waited for hours in that position for a wide turning movement to assist them—that movement was delayed and checked by handfuls of the enemy well posted and when, after fighting from 7 a.m. till nearly 4 p.m., the turning movement, aided by four field and one heavy (4·7) guns, succeeded, the enemy withdrew and his position was carried without a shot being fired to take it. The enemy had no gun of any description.

I fail to see why any modern European nation could not accomplish feats similar to these, given cover and concealment and an open field of fire. It is the uncertainty of whence the fire comes which now paralyses the attack more than anything.

If my contention be of any value, it shows how important it is that our Auxiliary forces should also have a much more careful training than they now get. How is this to be accomplished with officers who themselves have little but book work and theoretical instruction to guide them in teaching others? This has been recognised very fully for past years, and matters have been improved; but we can hardly pronounce them as satisfactory yet.

When may we hope to get a satisfactory infantry equipment for our men? Those officers who have worn the men's equipment in this war condemn it more vehemently than they ever did before. I wonder how many have said to me, "I've worn this thing, and I'm glad I have, for I

never had any idea what an uncomfortable, rotten contrivance it is for the soldier." So the South African War has at least taught the officers that fact. The pouch is a monument of imbecility. Ammunition has been shed from it and scattered all along the roads and over the veldt of South Africa. The Commander-in-Chief in that country had occasion to comment in Army Orders upon the quantity of rounds picked up after a certain ceremonial march past in one of the capitals, and to enjoin more care in keeping pouches fastened. I may here add that the Imperial Yeomanry bandolier, though a very nicely got up article, was discarded in favour of Boer leather ones with flaps over the cartridge pockets by our men whenever they could; the Yeomanry bandolier scatters its rounds broadcast.

I have alluded to the necessity of having a quick-loading magazine to the rifle, and I need only add the now proved importance of infantry officers carrying some rifle, which conceals their identity when in the fighting line.

In some reports I have seen of the French manœuvres in September last (1900), I observed that in addition to attack with masses of infantry, entrenching was entirely dispensed with by the defence. Nothing will, I imagine, ever entirely defeat the theorist in his supposititious deductions from what he thinks *ought* to happen, save the stern and terrible disillusionment of war itself. We as a nation have been quoting the Franco-German struggle in 1870-71 *ad nauseam* as our authority for many favourite deductions on which we have based our theory of modern war. It is to be hoped that our experience bought of—let us call it respectfully—a second-class nation will prove the grave of a good many of our follies. The French, without the advantage of our recent experiences, may continue to consider they are justified in believing things are now pretty much as they were in 1870-71 so far as tactics, etc., are concerned; it is no reason we should do so.

If we should ever be assailed at home, which I now believe to be a more remote contingency than it ever has been, or if we are unable to make headway in a big war abroad, our troops must "go to earth" forthwith. Entrenchments will, unless I am very much mistaken, be to the forefront in every great struggle of civilised nations; not great banks of earth and stone, but neat, wily hiding holes well below the ground—undiscernible at even short distances, with a few clods and a bush for head cover and concealment, and scooped out as Cronje's trenches were, just enough to admit of a man's back when squatted comfortably in the narrow pits during heavy shell fire. We don't want miles of neat trenches on the patterns hitherto in vogue—a series of very short ones to hold 4 to 6 men each is now the idea—these are dug some yards apart, the earth scattered around or piled up between the actual trenches to draw fire to the wrong spots. Hasty cover is useful, but if artillery is on the *tapis* you must have something of a better class. Anyhow, a proportion of trenches, pretty deep, well in front of the main position (which you will not occupy whilst your enemy is searching it with his artillery), will suffice to check

attacking infantry which cannot see them, until such time as your trenches, etc., on the main position have been occupied at the last moment. Balloons cannot locate for the attacking infantry these hidden, scattered, small trenches—that is, they can merely denote their general whereabouts to the troops.

Now, with what entrenching equipment is our infantry provided? They have had in South Africa a toy tool, a horrid encumbrance on the march, useful to dig a trench round a tent or bivouac blanket-shelter or to scratch a hasty entrenchment. These tools were plentiful enough with new comers—for some months towards the latter part of the real campaign I cannot recollect to have seen any at all carried by the men. They are absolutely useless for the serious work of entrenching, and I venture to unhesitatingly assert that nothing of that size and weight can be invented which will be worth the fatigue and inconvenience of carrying on the soldier's person. We must have real useful picks and shovels with which a full-sized man can dig a full-sized hole to hide in; nothing short of this will suffice. It means more transport—better so than be without the proper tools for a battalion to entrench—and that is our present case on service.

The soldier does not carry his kit in climates like South Africa. In winter, at all events, South Africa, in the Republic, has a bracing climate hard to beat. If the infantry soldier cannot carry his service kit in South Africa in winter he can't even do so in France, Germany, South Russia, or at home. I don't know where else, not being a "hot climate," he may be expected to fight. Query, is it worth while maintaining the farce of marching about with it in winter at home? To commence with, he does not want his kit, for perhaps a month at a stretch he can do practically with what he stands up in. But there is no reason why we should not regulate matters, so that his moderate kit for service should be carried with him on wagons or carts as it practically has to be anywhere he goes to fight. If we made up our minds to these things beforehand they would be simpler to carry out when on service, and would cost us nothing more than at present.

Any general will tell you that he does not seriously believe in the average soldier carrying his full kit, equipment, ammunition, and rifle, especially at the opening of a campaign when he is soft from board ship or long civil life employment, and do forced marches if called upon—it is difficult enough without all that encumbrance to attain to this. But mobility is all-important, especially with the infantry, and the ultimate issues of a campaign often depend enormously upon the mobility of either side in its opening phases. We ought to face the inevitable, and abolish all extras on the man, save his greatcoat and possibly a waterproof sheet for service, and his canteen and water-bottle and haversack. This is all our infantry ever carried even in the cold winter weather of the high parts of the late Orange Free State.

Another lesson we may well take from our South African Campaign is in the matter of tents. It is not well to depart from the conservative customs which have held our Army for such ages past. To part with the

"bell tent" for active service would be rending one of our dearest associations—dating from the time of the Crimea, or of Cressy for aught I know. I have no fault to find with the bell tent as a bell tent. It is bad in its shape for many purposes—it has an enormous and heavy pole—it requires a tremendous number of rather heavy pegs, which either will not go into the South African sun-baked ground, or else, if forced, split themselves and the mallets. When wet it is very heavy and hard to pack up—when dry it has such a multitude of ropes to hold it that it is the labour of several men to pitch it. It is conspicuous, leaks in really heavy wet after being dry, and when you want to march light and in any hurry it is the first thing you return to store—that is if you are a wise general and mean "going." I know of some divisions in South Africa which were without any tents whatever for many months, both in the winter season and in heavy rain. I also know of cases where, under these circumstances, some battalions had not quite *one blanket* a man, and of many which possessed no more than one blanket per soldier. Sickness—chiefly dysentery, fever and colds—was of course very prevalent, but did not destroy the mobility or fighting efficiency of the force so much as to be felt seriously.

Personally I possessed a very small bivouac tent 7 feet wide—capable of accommodating easily three persons to sleep under it. The tent was of waterproof canvas made in two parts to button over the top—when wet it weighed perhaps a pound or two more than when dry, but since the canvas was practically waterproof it was always dry inside (except from one's breath in frosty weather), and weighed without pegs about 10 or 11 lbs. It was closed by flaps tying at both ends, and during the worst storms I ever had in it, not one drop of water got through—it was very warm on cold nights in comparison with big tents.

If a ground sheet of light waterproof material were carried by one man, and the tent, divided, by two more (the poles and pegs weighing perhaps 4 lbs. all told), you would have a bivouac tent capable of housing three men in the worst weather, convertible into a very large "shelter" to accommodate and shade half a dozen in hot weather and rendering the men independent of the cumbersome bell tents which they often could not get if detached, even when they were carried along with the troops. The soldier in South Africa contrived wonders with his blanket as a shelter on cold wet nights, but he could not have a blanket to cover him if he made a tent of it, and men suffered very severe privations often in consequence.

The tent I recommend is one made by Edgington Bros., London, and was originally designed for South African Police use and called the "Patrol Tent." I can vouch for it, having spent many months in it in all sorts of weathers, that it is all a soldier can need, quickly pitched and packed up—perfect shelter from all weathers and quite commodious. I found by excavating a couple of feet one could stand up in it and it was as comfortable as could be. I am aware that the *tente d'abri* is a French invention. I believe the French Army still stick to it and find it answers the purpose. I would recommend its trial on some wet manœuvres at home, giving one brigade the tents the other *none*. I fancy

the report would be satisfactory n the former compared with the latter case. And, after all, this is what it comes to on active service.

The clothing of our men is not made of tough enough material; after hard wear for even a couple of months men were in rags. Irish and English regiments had men masquerading in *impromptu* kilts—a waterproof sheet, or a blanket to hide their raggedness. The boots were really good; but why will men take over boots which are too small and the next day cut fancy pattern patches out of them wherever the "rub" comes? And why is this permitted? I have seen somewhere that few other nations provide socks for their soldiers. I do not know now that these articles are not mere luxuries, for I know that many hundreds of miles in South Africa were marched by sockless feet in tattered boots.

I must pay a well-deserved tribute to the infantry soldier of our Army, a tribute he has received many times from abler pens than mine. At fighting he is indeed hard to beat; but at marching, once you have got him "fit," he has, I think, few equals and no superiors in the Armies of Europe. On half rations, or even quarter, he has stepped along the weary trudge of mile after mile across the brown veldt, under the South African sun, always warm and sometimes very hot. He has lain out at night in rain and wind, in frosts which have left their white mantle on the earth in the bitter hours before a winter sunrise, and has bivouacked amongst the rocks on the side of a kopje with stricken comrades all around waiting for the dawn to recommence the work of death! Through it all, in sunshine, rain, frost, and battle, he has shown the sterling qualities of his race. Nor has he been behind in the matter of good behaviour. I do not know of one instance of a real outrage committed by a soldier; petty misdemeanours there may have been; but in my own experience, which has been a fairly wide one, the inhabitants have ever found a protector in the soldier. No one can avoid concurring with the oft-expressed opinions of Lord Wolseley and Lord Roberts—that drink is not essential to men leading the healthy open-air life ours have in South Africa; and to its absence, save for an occasional tot of rum after an exceptionally hard day, may be attributed the excellent conduct of the men. I quite believe that if all beer were stopped at manœuvres the men would march better and withstand the sun and exposure as they do when on active service.

If then the British soldier merits so well of his country, and I maintain that he does, surely it is not too much to ask that he should be given the chances of improvement which he now lacks, and that the alterations in his surroundings in the field, upon which his comfort and well-being very largely depend, should be affected without questioning the cost.

There is a saying that "An ounce of practice is worth a pound of theory"; in the case of our Army this is absolutely the case. We have had lately many ounces, or rather "tons of practice," and it now chiefly remains for us to profit by it, instead of bowing down as heretofore to theory. Not the smallest "ounce" of practice the soldier has gained in South Africa is in the matter of cooking. It was quite remarkable to

note the readiness and resource which came after a short while. At first the men absolutely starved when making long marches. They could cook nothing until they got in at night, and I fear want of fuel often sent them to sleep almost supperless. A little later on you might see at the midday halt innumerable tiny fires on the flanks of the companies—two or three men cooking a steak or making flour cakes over the heat produced by a few pieces of dried cow dung and some dry grass to ignite it. I venture to say that some thousands of very fair "emergency" cooks have received their education in the great Boer War in South Africa. It was badly wanted, this practical cooking lesson for our troops; it will be a pity if it is not kept up in the generations to come by constant practice at manœuvres and when at company training. It is a very important matter though it may seem trivial, and the man who can cook his own meal will never starve; the one who cannot will very often have to go hungry when on service.

III.—Staff Officers.

No campaign is ever without its crop of experiences in regard to the working of the Army Staff in the field. In a recently published *brochure* by a British Staff officer the Staff work with the Army in South Africa comes in for some very strong condemnation, as also does the system under which our General Staff is trained for its duties, and the Staff College itself as an institution for its training. There must ever be, in the Staff officer as in everyone else, degrees of capacity and excellence varying much in different individuals. It has been held that Staff College officers are chiefly theoretically trained and lack the necessary experience due to practice—that in peace-time they are more often simply head clerks; that owing to our want of adherence to the rule which relegates Staff officers to their regiments, after a certain period of continuous Staff employ, many have lost all touch with the soldiering part of their profession in connection with things regimental until suddenly thrown into the midst of daily active contact with corps in the field, whose wants and daily trials are no longer appreciated by the Staff officer as they would be possibly were he fresh from personal experience of matters regimental; that consequently the necessity for feeding the men, and by good systematic arrangement lessening their fatigues and adding to their comforts, is very often overlooked in the desire to carry out office routine with the nearest approach to red tape of peace that is possible in war. Undoubtedly much of this is true in instances, but I am not by any means prepared to advance the proposition that this is the rule, nor that the officers trained at the Staff College are the worst offenders.

It is nevertheless true that theoretical training at the College cannot make a Staff officer in the field; it can but place an officer in a better position to fulfil the many and difficult duties which will fall to his lot, and give him the knowledge on most subjects which ought to help him to master problems coming before him better than the purely regimental

officer can. Best of all, of course, is the proficiency bred of varied experience in the field—the practical application of common sense to situations as they occur—and here again certain men have the natural advantage over others owing to their innate aptitude for the work.

I think the great fault in our Army Staff system is that the Staff College Certificate has come to be considered as conferring a right to Staff employment on the grounds that its possessor has spent a considerable sum of money, as a rule, in preparation, and has spent two years of hard work in obtaining it. We have often read very severe comments upon the appointment to the Staff of officers without the magic "*p.s.c.*," whilst several who had this honourable distinction after their names were waiting for appointments. The graduates of the College are naturally very clannish, and view with dislike the opening of the door to outsiders who have not graduated in the same school. Indeed, I believe the rule has been, with certain exceptions, that appointments on the General Staff of the Army are only to be held by those who have passed the College, earned the equivalent by six months' Staff service in the field, or who hold the rank of lieut.-colonel.

Now, if the officers of the Army were asked, we should learn that amongst the best Staff officers in the field are many who never qualified educationally for "*p.s.c.*" after their names, these naturally being men whom circumstances have thrown into Staff appointments where practical experience was to be gained, and who, having the aptitude for it and plenty of brains, acquitted themselves in such a manner as to be selected again and again for Staff work in the field varied by posts at home possibly. It is, therefore, evident that a Staff College qualification is not a necessity for a good Staff officer. But, all things being equal, it is impossible to assert that the theoretical training will not tend to improve an already capable officer; it cannot harm him to possess the extra knowledge, and it may benefit him not a little. I do not, therefore, see why officers qualified by Staff service in the field should not be sent, without entrance competition, to the Staff College to receive the benefit of all-important theoretical instruction—that is, if our authorities really believe that officers are not fit for ordinary appointments to the Army Staff who do not possess the magic letters "*p.s.c.*"

I, however, lean to the belief that the Staff College as an institution should not be so much intended as a means of fitting a certain number of officers, who have contrived to pass through it, for Staff employment, as a means for the propagation of higher military knowledge amongst the officers in general in the Army. If this were the view accepted, there would be no such thing as a "claim" to Staff employment—the failures might be debarred from advancement in this direction, but the remainder would know that it lay with the War Office authorities to select the very best for the posts for which they are most suited—there would be less of the "square man in the round hole" than is sometimes the case now. Men whose mental aptitude is for Army matters on paper should be kept in their line as much as possible, whilst those whose aptitude lies in dealing with men and things in the flesh would be employed where

these qualities would find most scope. It is quoting an already much-hackneyed argument to point to our most brilliant generals as, with few exceptions, men who never passed through the Staff College, but bought their experiences in the field and supplemented them by private study of their profession.

If it be admitted that the theoretical training of the Staff College is valuable from the point of educating the officers of an Army, which is the highest ideal it can claim, then let us see in what manner its benefits can be extended, so as to give a much larger field of selection for our Staff officers. The existing College is on too small a scale, and its course double the length that is really necessary to give *junior* officers an insight into the mysteries of a lower grade Staff officer's business. Such is my opinion as I venture to give it. The service qualifying an officer for candidature is five years. Few are then out of the subaltern grade, and such as pass may possibly be debarred from Staff employment for some years to come. In any case, so many subalterns are now taken for various courses that I think it would be advantageous to raise the period of service before entrance to at least eight years, or to open the College only to captains. This would ensure that the officer had had plenty of experience regimentally and was of a position suitable for Staff employment, when he left the College. The accommodation of the College should be doubled, and its course for the junior division reduced to one year; the details, which every officer should know in his regiment, being either eliminated or briefly touched on in the course.

In all corps the names of officers eligible and recommended, who are desirous of passing the College should be registered, and these should be selected in rotation, having due regard to their service and positions, for admission. There would be no entrance examination. At the end of six months, during which the students should be really hard worked, there would be an interim examination in the subjects of the term—those who failed to pass the standard determined on would be sent back to their corps and their places filled by fresh nominations. Those who passed the final examination at the end of the year to be given the *p.s.c.* certificate and confidentially noted as to their capacity, aptitude for special lines of Staff work, and other important particulars as a guide to future selection. Commanding officers, who permitted officers to enter the College whose professional attainments were manifestly below the standard of their service and rank, to be adversely noted in that connection and serious notice taken of any repetition of the offence.

In this way about double the number of officers would be passed through the course in half the time now occupied at the College by each batch; and many more who cannot, or do not now care, to crave for admission, would hail the opportunity of improving their service chances by passing through the College. Some might be precluded from ever entering. But if we consider the numbers who will abstain from putting themselves down for a really severe year's training, and of those whom commanding officers cannot conscientiously recommend as up to the mark, and also the fact that many men who would like to pass now never

get the chance from one or other circumstance, I do not think any real hardship would be occasioned which does not now exist.

The higher education of the regimental officer would be certainly improved, and when the pinch comes the nation can lay its hands on many more men who have been theoretically trained; and there will be at their back plenty of men similarly qualified for the multitude of "special" appointments which arise in connection with every war, and which are now often filled by men who have the most meagre record for Staff efficiency or none at all. But in my idea the Staff training of our officers should not end here. Under what I have recommended above, the regimental officers will qualify in all instances as older men than some now can under the minimum of five years' service before entering the College. But a considerable gap in point of time must still occur between the captain who leaves the College after seven years' service and the same officer finishing his period of command of a regiment or battalion. During these many years what he learned at the College will have been considerably modified by the advance of military science, and his impressions, if retained with any vividness, will be of comparatively little value to him in his future, whilst they may actually be a drawback in some respects. The theoretical teachings of the Staff College, unless very much kept up by reading and modified by keeping pace with the times, new inventions, and fresh theories of war, will be very stale indeed in the colonel whose regimental career has come to a close and who was trained twenty or more years previously.

In my idea, therefore, there should be a senior division of the Staff College, whereat colonels, after completion of their term in command, could get brushed up in the most up-to-date improvements tactical and theoretical of the day. Such an institution would not, of course, be of the nature of a school, and no examinations would be necessary at the end of the term of "lectures" which these senior officers, from whom our generals will be drawn, may attend, provided they desire to follow on their profession to its higher appointments. If this were done the older men would be more on a par with their juniors in point of recent military improvement; the lectures, which should of course, be given by the ablest exponents we possess of the higher branches of military science, would cover the questions of strategy, tactics, armament, organisation, national defence, and, above all, the important one of supply—all of which the upper grades of Staff officers and our generals should be most thoroughly conversant with if they hope to *understand and make smooth the working of the junior Staff officers under them.*

I believe that a very great part of the alleged inefficiency of our Staff in the field is due to the two classes of senior men sometimes met with—those who want to do everything themselves, because they fancy it is safer than allotting the work to the juniors, and those who allot to the juniors work they should not, and cannot, perform, because they do not understand the principle of chain of responsibility, and desire to lay it all on those beneath. Similarly, a general officer who will insist upon arranging details he ought to hold his Staff officers responsible for, is very apt to

neglect, in so doing, the wide field of supervision over the troops, which is his first duty. It is for him to see that his Staff throughout provides for the safety, comfort, and accurate movement of the troops so as to ensure that there occur no unnecessary hardships or undue fatigues through forgetfulness; and it is the duty of the senior Staff officer to allot and supervise the working of his juniors, not sparing himself where necessity demands, nor endeavouring to retain every department in his own hands. This uniformity of system throughout the General Staff of an Army will be best attained by ensuring that all officers possess a sound knowledge of the most modern systems governing the control of all departments in the field as well as in peace.

If I have dwelt somewhat at length on this matter, its paramount importance must be my plea.

The time has not yet come when fair and unbiased criticism on things in connection with the Staff and the war in South Africa can be ventured upon; but when that time comes I think it will be found that if failures have come to light in not a few instances, they were as much, or more, due to circumstances over which the individuals had little or no control as to actual want of ability on the part of the individuals themselves. In a vast Army it cannot be hoped for that mistakes will never be made—and probably as few have been made in South Africa, considering the local conditions, as have ever come to light in so prolonged and difficult a contest. I am not the only person, by a great many, who hold that our system of training and selecting Staff officers is faulty in many respects, and that as Tirah, in '97-'98, and this last great campaign have shown, the system needs some amendment when Army reforms are undertaken, and that the aim and object of reforms in this particular should be to increase the spread of professional knowledge amongst our officers, and thereby have a larger field for selection of Staff officers, coupled with the benefit of up-to-date instruction for the seniors in our service.

Conclusion.

It has been my endeavour, in this essay, to extract some lessons taught us by the South African War, and I have not considered it as part of the subject to go deeply into and recommend abstruse remedies; such would be beyond the scope of this paper.

In considering the various matters connected with the *personnel* of the forces in South Africa and their work, we have to recollect the almost unique conditions under which the war has been waged. It is not possible now to arrive at any truthful or reliable estimate of the numbers the Boers had in the field when at their best in the war, but if we put it at 90,000, including all Auxiliaries, we shall not, I think, be greatly above the true estimate.

When we consider the nature of the country we had to conquer, the superior mobility of our enemy acting on interior lines and within his own friendly territory—when we consider the enormous strength of most of his positions, which could only be carried with an unreasonable loss of life, and were almost impossible to turn; when we consider the length

of our lines of communication and the paucity of railways available, the rough nature of the roads by which troops had to move at great distances from any railway base, the necessity for large convoys of stores in wagons, and for large detachments to escort and protect these—when we remember the impossibility of properly garrisoning the country our columns had conquered, except in the vicinity of the all-important railways, we have before us the task Field-Marshal Lord Roberts had to accomplish with a force of barely 3 to 1. This is the truest light in which to put the gigantic nature of the task.

Its accomplishment could not be effected without the very highest qualities in the Army being called forth; and Lord Roberts' success speaks for itself as to the true inner efficiency and the value of that Army, composed, as it was in a great degree, of untried men and raw material in nearly all its branches. Whatever our shortcomings, I am personally convinced that the Army of no other nation would have done better, and probably none so well as ours has done.

On the other hand, we must remember that the Dutch Republics were not an Army, but a people in arms, deficient in modern organisation as we know it, and depending on the inborn talent of generals and leaders whose experience was not that of warfare on modern principles. It cannot be denied that we owe almost as much to the mistakes made by the Boer generals as to the successes of our own, that our Army was not even more highly tried than it has been. It, therefore, behoves us to approach the subject of this essay in a discriminating spirit, not allowing ourselves to be carried away by the experiences of this war to the extent of basing all our calculations for organisation on its varying fortunes, nor blindly proclaiming that, because it was fought by us under unique conditions, its lessons will have no bearing upon the probabilities of future struggles with modern civilised peoples. If we extract the shortcomings, made patent by our observations in South Africa, and which have a bearing on our power of raising a large field army, and on its armament and equipment, and pass by those which may be fairly adjudged to be the outcome of local circumstances not likely to recur, we may collect many valuable hints which will prove, if acted upon, to be of lasting benefit to the Army and to the whole Empire.

Written, as these lines have been, under the many disadvantages and drawbacks incident to active service in the field, I am conscious of the many shortcomings which exist in their compilation. References were impossible, and *data* upon which to prove conclusions of course unobtainable. I have endeavoured only to put on paper my impressions as deduced from what has passed under my notice during the campaign, and to avoid attempting to deduce lessons from what may have been merely the outcome of local surroundings and circumstances.

If I shall have succeeded in enlisting the sympathy of my readers in the cause of the Army of which I have the honour to be a member, and of exciting their intelligent interest in the great question of its welfare, I shall have gained something of which I may indeed feel proud.

SOME IMPRESSIONS OF THE WAR IN SOUTH AFRICA.

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Wednesday, 17th April, 1901.

General the Rt. Hon. Sir REDVERS H. BULLER, V.C., G.C.B., G.C.M.G., Commanding the Aldershot District, in the Chair.

MR. CHAIRMAN, my lords, ladies and gentlemen, I have accepted with great pleasure, though not, I must confess, without considerable misgivings, the invitation which was tendered to me by the Council to come here this afternoon and offer you very respectfully some observations. I see around me so many distinguished officers, under some of whom I have had the honour to serve in the field, that although I regard it as a great honour being asked to come here, I cannot help at the same time fearing lest it should be thought, and even declared, to be presumptuous on my part to lay down the law on military subjects under such auspices and in such company. The title I have chosen for my subject is, as far as possible, intended to palliate this. I have called it Some Impressions, or Some Lessons of the Boer War—not by any means the chief lessons, and still less all the lessons which have arisen out of this conflict. I could not undertake that. All I venture to do is to place on record one or two of the ideas and impressions which have been most forcibly brought home to me during the ten months I was a participator or spectator of the South African drama, which we now hope is entering on its last act. I do not put this forward as an aggressive pronouncement in any way, but only as some small contribution to the great fund of information and experience which has been collected, and is still being collected, on these important subjects, from which it will be the duty of the responsible military experts to select in the future whatever may be of advantage and of value to the British Army.

In the beginning, I went to South Africa as a war correspondent, and therefore I think it will be appropriate if I begin with that most important subject—not the most important, but, after all, a very important branch of the Army. The vexed question of the war correspondent has excited a great deal of interest, and a certain amount of controversy lately. In the first place, there is no doubt that the war correspondent

is an anomaly. Why should an irresponsible person, all untrained in the art of war, give to an anxious and excited nation at home what is often the only — because despatches are not always published, and sometimes long delayed—account of important actions, every incident in which involves the honour of famous regiments and the reputation of distinguished public servants? That is a very hard question, and I confess that I cannot find any direct answer to it. Perhaps it will be said on that account by certain persons that we ought therefore to have no war correspondents at all. But surely, Mr. Chairman, the same objections would apply to the Press in general as apply to the war correspondent in particular. Why should a newspaper take upon itself to criticise the actions of a Government, which must know more about the subject with which it has to deal than can any editor? I can find no answer to that either. But the Press has come to stay, and that must be realised. And so have the war correspondents. These are great facts, and a refusal to recognise them, in my humble opinion, only shows on the part of the refuser an inability to adapt himself to modern conditions. Those who are worried and troubled on this matter must find what consolation they can in the fact that upon the whole, since there has been a free Press in England, we have had a freer and healthier country to live in.

Things being so, the question now arises, How can the war correspondent difficulty be reduced to a minimum? How can you get the most good and the least harm out of the war correspondent? Various suggestions have been put forward. Some people have suggested a club of correspondents. I think the objection to this is, that if you had a club, which would be a close corporation, you would not get the high standard of efficiency which you, perhaps, get now. It would be very difficult for young men to make their way into the hierarchy of correspondents. Then it has been suggested that only the great newspapers should send their correspondents. I do not agree with that, because, in the first place, there is safety in numbers. If you are to have any imperfect accounts, by all means let us have *all* the imperfect accounts, because one corrects the other. Besides, which are the great newspapers? Are they the papers which are sold for the greatest price, or the papers of which the greatest number is sold, or are they the papers which give the most extravagant and largest statements? That is a great difficulty. Then it has been suggested that only gentlemen should be war correspondents, because gentlemen may be trusted to tell the truth. That raises the great questions, What is a gentleman?—And what is the truth? We all know perfectly well, and we can decide this matter clearly about ourselves, and for ourselves; but the difficulty is that everybody knows that he himself is a gentleman, and that what he writes is the truth. But, unfortunately, one does not constitute a quorum in a case like that.

Now, I have a suggestion on this matter. I am, in great matters, a political optimist, and I believe in free competition, and the general upward tendency of things. I say, let the soldiers enter the arena themselves—let them take the journalists on at their own game. If accounts

are to be given to the public, let them include the account most likely to be true No account will be true: the truth is never known about a battle. But although no account will be actually true, let us get the accounts which have the largest percentage of truth possible. Report is better than rumour any day, and does more to allay the circulation of rumours than anything else. If the public are to hear all versions, let them also hear that version which contains the greatest measure of probability. How often unjust criticisms are made which would be avoided if the general's motive for making each movement was known. Take the case of Sir George White at Nicholson's Nek. A disaster occurred there to a detached force on the left of his army, and everybody said what a ridiculous thing it was to send a force of infantry out so far to turn the enemy's right flank. Of course it would have been a ridiculous thing, but nothing was further from Sir George White's intention than to do that. The force was sent out, not for that purpose, but in order to hold a path in the hills through which, in the event of the main action being fought successfully, his cavalry could push in order to operate on the enemy's line of retreat. That is one example of the harm done through the general's motive not being known to the public. How are we to obtain the most likely account? Obviously through a professional soldier in the confidence of the general officer commanding, a man who is in possession of all information which may be safely given to the public.

My suggestion is this: The general officer commanding any separate force larger than a division, or any separate expedition, shall have on his staff an officer, trustworthy and clever, with a good military education and a nice literary style—there are plenty of such to be found in the Army, which is not, contrary to the opinion held in certain civilian quarters, by any means composed of dunderheads—and it should be the duty of this officer to write, under the general's supervision, letters descriptive of the operations, which letters the War Office, at their discretion, shall issue to the Press. These memoirs would not be in any sense despatches. Mention in them would count as no more than mention in the ordinary war correspondents' telegrams. Sometimes the mention of individuals in war correspondents' telegrams has been the means of making a very marked and perhaps permanent impression upon the public mind. These memoirs would not be history; they would not even be official history, which is a modification of the real thing; they would be merely the best information obtainable, which could be given to the public as the general responsible on the spot and those immediately around him saw the events themselves, and without causing the general to waste his time in writing long, wearying despatches, or, on the other hand, through not doing so, seeing every motive but the true one continually attributed to him. These memoirs would not interfere in any way with the ordinary competition amongst war correspondents, which I suggest should continue precisely as it does at present. They would not attack the rights of the Press in any way. Of course, if the military accounts were clear, vivid, and we written, the proprietors of news-

papers might not think it worth while to incur the great cost of sending correspondents into the field; and consequently, without in any way limiting the right of the Press to do so, it is possible the number of war correspondents might be reduced—and some people think that might be an advantage. I commend this suggestion most particularly to you. I think it solves a very intricate and urgent question. Moreover, it is a popular solution on natural lines. All would welcome it. The War Office would welcome it—at least, they ought to welcome it—because it would give them an opportunity of showing how they desire to study the public in every way. The general in the field would welcome it, because he would not perpetually see every motive but the true one attributed to him. The public would welcome it, because they would get to know a little more of the truth than they do at present. And lastly, the Press would welcome it, because they would get good copy for nothing. There is one other party who would welcome it, and that is the officer who would be selected for this duty. From what source shall we draw these officers? It gives a great chance for a military officer to make his reputation with his superiors, if he writes accounts which clearly show that he has ability and a clear comprehension of military affairs. Besides which, there is all the glamour of active service, and there is always great competition amongst officers to be employed at the front. I have heard it said—I would not say it on my own responsibility—that military education in the Army is not in many cases so high as it ought to be. I know from my own experience that the garrison instructor in the Army, the instructor at the military colleges, is rather looked upon as being out of the general swim of military life. Here is a way to popularise this most important branch of the Army. There is no better way of popularising the idea of military education than to give this excellent opportunity of displaying talent, with all the glamour of active service thrown in, to officers who, as lecturers and instructors, either with their units or at the military colleges, have shown zeal and capacity.

I now pass to another matter which, I am afraid, is rather a technical one. I see a great many ladies present this afternoon whom, I confess, I did not expect to meet at such an entirely professional Institution as this. But I trust they will forgive me if I talk shop, because I understood I was to come here to do so. With regard to artillery in South Africa, I do not propose to dwell this afternoon upon the defects in *matériel*. Some people have said that they existed, others have strenuously controverted it. About that subject I myself have expressed my opinion elsewhere, and I do not desire to repeat myself this afternoon. I have got rather into trouble with the artillery, because some of them think I had a prejudice in what I wrote of them. I can assure you, ladies and gentlemen, nothing of the sort ever entered my head. I yield to none in my admiration of the courage of the gunners. I have seen them in the Boer War, often standing up to their guns, knowing that the range had been taken to a nicety by the enemy, exposed to fire by guns of longer range than they were using, which they could not reach to reply to, and which every half minute or so sent a shrapnel shell ripping right from

one end of the battery to the other. But at the same time the courage of the artillery should not prevent us from discussing and going into the details of the arm, in order, if possible, to improve the excellent manner in which they handle it at present. It used to be an old dictum of the artillery that "one gun is no gun." I think that came from the Franco-German War, from which we got a good many things which have not proved of entire service in other wars in which we have been engaged. I do not think I shall be exaggerating when I say that that has not been found to be precisely true. How often have the Boers produced considerable effect with one or two guns! How often have they disturbed a camp, or made it necessary to take a long detour with marching columns, and—as my right hon. and gallant friend who has taken the Chair this afternoon will, I daresay, corroborate—one heavy gun with a disappearing mounting, placed on the extreme right flank of our advance at Vaal Krantz, was a very serious factor in the possibilities of further movement towards Ladysmith on that occasion. Why should not we use one gun occasionally in the effective manner in which the Boers have been able to use it, although it is against all the German ideas of artillery? What Marshal Canrobert called the "tirailleurs d'artillerie" was applied to the Germans, but that was in the case of a battery. I suggest we should have what I might call artillery snipers; a few single guns with long range should be utilised, under specially selected officers, to act independently, or with advance cavalry, even with patrols, to harry and disturb the enemy in his camp or on his march, and in every way to use a gun where it would not be expected that a gun under any circumstances would be brought. It may be said that these guns would fall into the enemy's hands. What does that matter? In a European war that would be of no consequence at all, because the enemy would not use them against us. They would have more guns than they could drag in the field, and our ammunition would not fit their guns. Even if it were of consequence, surely a little gun-cotton judiciously applied to some part of the mechanism at the critical moment would solve that difficulty.

The main point which I noticed in wandering about, and meekly observing what went on in South Africa, was that on frequent occasions there was a failure of the artillery to co-operate with the infantry attack. How often at the critical moment, when the infantry were struggling up to close with the enemy, the supporting artillery who had been firing during the morning in preparation for the attack, have had to stop firing for fear of hitting their own men! Just at the moment when the infantry most need the support of the guns. That is the moment when the artillery have to withdraw all support from the attack; or else, what sometimes happens, and is very nearly as bad, the artillery go on firing too long, and keep the infantry hanging about in the thick of the fire, unable to rush in because they see their own shrapnel bursting on the enemy's trenches 200 or 250 yards in front of them. I do not myself know how clearly it is laid down in the drill book, but if it is not laid down it ought to be laid down, that before an infantry attack is made the C.R.A. ought

to always confer with the infantry commander who is going to lead the attack. The infantry commander ought to say:—"I am going to attack at 12 o'clock, and when I get to those black rocks there I shall want a little pause to let my men collect themselves, and generally arrange themselves for the assault; and then I will make you some pre-arranged signal, and then I shall want you to give me the most rapid firing you can for three minutes, or some period, at the end of which my infantry will rush in to attack and storm the place." I noticed particularly how often a failure happened at this time. The infantry were driven back by the Boer fire, which did not break out until after our artillery had ceased firing. It was not until the battle of Pieters Hill, on the 27th February—and that is the only case in the whole of the Boer War, so far as I can judge—that I really saw the artillery give an effective support to the attacking infantry. There, when the infantry got to close quarters, although our guns could no longer fire on the Boer trenches, they put up their sights 600 or 700 yards, and sent the shells clear over the Boer trenches, so that the enemy who were running away would be overtaken by the shells as they were doing so, and those who stood in the trenches still felt the projectiles whistling and screaming towards them. No doubt that was of great assistance to the infantry attack.

Of course there are great difficulties. The chief of the Royal Artillery is confronted with difficulties, owing to the great extent of the modern field, in controlling his guns effectively. In that last 14 days' fighting which ended in the relief of Ladysmith, the batteries were spread about by the necessities of the operation among broken and rocky ground. Their line was divided by a river which was passable only by a long detour to the bridges, and no system of signalling would effectively enable an artillery commander to direct the whole of his batteries this way and that way, like a great hose, which he ought to be able to do. A mounted orderly would take, perhaps, half-an-hour to get from one battery to another. As I say, by signalling it is almost impossible to do it. Supposing the heliograph signals over "Fire on the brown kopje." That takes some time, and then comes the message back from the battery, "Which brown kopje?" Then you say, "The brown kopje with the trees near it"; and the answer comes, "Do you mean the brown kopje on the left of the trees or on the right of the trees?" So it goes on. How is the chief of the Royal Artillery in any action to point to the place he wants fire to be concentrated on, or the pace at which that firing is to proceed? He cannot put his hand on the kopje; it may be 5,000 or 6,000 yards away. I do not see why he should not have a gun which fires a coloured shell, and when he fires a coloured shell at this particular kopje all the other guns (unless he has detailed them for some other duty) would know that they were to concentrate their fire where this coloured shell exploded. It occurred to me that something connected with iodine might give bright purple fumes immediately visible. The chief of the artillery should have two long-range 12-pounders of his own. When the ordinary action is going on they could be used in the ordinary manner in firing at the enemy; but supposing he

wishes to concentrate the fire of his batteries on one particular part, he would then slip in these special chemical shells, which would immediately show all the other commanders that that was where firing was needed. I know you have to beware of complicated arrangements in war. But this idea might, perhaps, be extended. If he fired one shell on a kopje that might mean two minutes of rapid firing, and some code of signals might be arranged without getting into complications, which invariably break down when carried to too great an extent in war. I hope it will not be thought that this suggestion is a fantastic one. I have talked it over with several distinguished artillery officers, and they have not laughed at it at all. But as they are grave people, I do not say that they have received it with any exuberant enthusiasm.

I have one more suggestion which is entirely my own, and which I trust you will not think I put forward in any frivolous mood. The great difficulty of finding brigade and divisional commanders in the field I think comes home to anyone who was sent carrying messages in South Africa, especially in the Orange Free State, where the extent of ground over which the army was spread was most enormous. How are you to find the general? you ask. You are told, "I saw him here half-an-hour ago, but he has galloped over there." It was utterly impossible in many cases for the bearers of important messages to find the different commanders of the different brigades and divisions. The general's flag was hardly visible at such great distances, and when it was visible it was usually fired at, and taken down. The heliograph is no guide, because there are so many heliographs and signal flags working on a modern field of battle that one is by no means any guide to the position of a general officer. The only thing we could see in the Orange Free State was the great balloon. You see it 20 miles off, and you knew when that was up that there was the headquarters of the army. I do not see why every general should not have his balloon. One general, one balloon. I would not suggest anything so democratic as that they should have all the same sized balloon. Each general should have a balloon in proportion to his rank in the Army. You may make a very convenient portable balloon about a yard square, that could be carried about on a horse by an orderly, and which would ascend 200 or 300 feet, and show distinctly the position of every brigadier. It may be said, "Would not that draw fire?" Very likely it would; but a balloon is a very hard thing to hit. Then it may be said that the bullets might go to the foot of the balloon. If I were the orderly I should choose a very large rock for sending the balloon up. There is no reason why the general should be at the foot of the balloon. What is important is, that the man at the foot of the balloon knows precisely where the general is, and the general goes no great distance from the balloon. You may think that is a fantastic idea, but I shall extend it. I do not see why the balloons should not be arranged with original designs painted upon them—perhaps the crests of the different generals; and supposing a general made a mistake, he should be punished, instead of having disagreeable things written about him, by having his balloon half filled with gas, which would naturally stimulate

him to make the greatest efforts to restore his position, and have his balloon made tight as a drum again.

What is the lesson of the regular cavalry in the Boer War? There have been a great many complaints against the regular cavalry. One gentleman wrote to the *Times* and said the cavalry subaltern was a very incompetent person. The daily papers say there is a general consensus of opinion that the cavalry have utterly failed in the work they have had to perform. I read in a book which has been published, "An Absent-Minded War," which perhaps I ought not even to allude to here, that the epitaph which would be written on the tomb of the British Empire was "Ruined by a cavalry subaltern with £1,000 a year." Among people who know, it is not necessary to pay any attention to such garbage as that; but at the same time there is no doubt that the cavalry are disappointed with the outcome of the South African War. They have marched and fought every day; they have never spared themselves; scores of times they have ridden out simply to draw fire and come back again—minus one or two. They have lived for weeks at a time, as they rode, without wagons or transport of any kind. Day after day they have been called upon to perform the most trying duties of peering alone or in little parties into dark broken country held by crafty and terrible guerillas. They have been sniped from dawn till dusk. Night after night they have had to bivouac cold and hungry far ahead of the supply trains. They have met the Boer at long bowls and at close quarters, among his kopjes and dongas, by surprise or with malice aforethought. They have met him—a row of dots far off on the glittering glaring veldt—in the open, a-horse and a-foot; and for all their efforts, their sacrifices, and their pluck, they have taken precious little change out of the Boer, and have earned nothing but abuse and criticism in England. Is it any wonder they are disappointed with the result?

But what was their previous training before they went to South Africa? I know something about this, because I underwent it myself. 75 per cent. of the cavalry soldier's time was taken up with drill in preparation for shock tactics. Shock tactics alone were what he was told he was to believe in. It is quite true he had a carbine, but that was only intended for bye-days. In every drill season, and at every inspection, regular, machine-like drill was what was required, and was what regiments were judged by. And there is no doubt they did it very excellently. Anyone who has led the directing troop of, let us say, the third squadron from the squadron of direction, in a long brigade advance, knows what an art troop-leading is, and what ceaseless practice and unremitting effort is required to obtain that accuracy of distance and alignment which is the proof of well-drilled, well-disciplined men. How beautiful it is, too! Who has watched without admiration and delight a cavalry field-day at Aldershot? The glitter and sparkle of scarlet and steel, the strange historic uniforms, the strong long-tailed chargers with their shell bridles, their sabraques, and their plumes, the bright swords, the solid ranks moving so swiftly yet so orderly, from mass to column, from column to line, until with a sound like the roar of a cataract the

charge sweeps across the plain, and the surging wave of men and horses stops obediently at the very feet of the spectators it had threatened to engulf. What wonder the Aldershot townsfolk and the sightseers from London clap their hands in joy and pride! Good drill, and I challenge contradiction, was the climax of the cavalry soldier's training; for this he lived and toiled; upon this he staked his faith, believing wholeheartedly that in the day of battle he would crash through the squadrons of the Tsar, the Kaiser, or the French, and trample vulgar infantry into the dirt. No wonder South Africa was a great disappointment!

No doubt if the other side had played at charging too, all would have been well, but the Boer would not have anything to do with it. He followed his own line of thought, and formed his own conclusions, and when he had formed them he accepted them with the courage of a Plato, and so it came to pass that the Boer has been the man who has struck the death-knell of the shock tactics. Time, who once used the pen of Cervantes to destroy the chivalry of Spain, now appears as a burly fellow in a brown coat, with a bandolier and a gun, mounted on a handy shooting pony, and in a month, or it may be six weeks, shock tactics, the magnificent pageantry of war, vanished, as I hold, never to return.

Let us see what happened in South Africa. If the cavalry had put into practice the lessons they had learned in peace in South Africa, it would have been ruin and destruction every time. If they had tried solid formations, knee-to-knee charges, good drill which they had learned in peace, they would have been invariably brought to the ground in ruin and in bloodshed. But the cavalry officers were very intelligent men, and the cavalry soldier is very quick to learn. The dense formations dissolved like the features of a dream at the rapping of the distant musketry. The cavalry learned to march in a loose swarm, through which you could just see the formation of the old squadron, just as the outlines of a ghost are outlined in a picture. They scattered themselves far and wide over the limitless plains. They let their useless swords run to rust in their scabbards, and they drew forth the neglected carbine, a poor weapon at the best, but better than nothing, and they began to repair in the open field of war the deficiency of the rifle range. Yet how handicapped they were! They were to play a new game altogether. The Long Valley and its charges seemed very far away. Scouting, screening, skirmishing, fire tactics, fire slopes, range-judging, studying ground in its relation to rifle fire, and minor positions with a view to attack and defence—such was the work they found set before them. Nor was it soothing to their pride to find squadrons of Colonial Horse and South African corps, raised at ten days' notice, considered as good as, and often better than, the finest and most zealous regiments. Yet they persevered. What they lacked in training and knowledge they gained in discipline, and they learned all kinds of tricks very quickly. Gradually they began to throw away the mysterious rubbish with which their horses were encumbered—extra high-lows, hold-alls, shoe cases, and such like—as mariners jettison the cargo to save the ship. They looked enviously at the long rifles of their irregular comrades, stole one every now and then from a dead Boer,

or a dead infantry soldier. To the last they were hampered by their training and equipment; but to the very last they were steadfast and always improving. They did their work with more cheerful discipline than the irregular horse, and for a quarter the pay. In spite of their carbines, they were as useful in action as the regular mounted infantry, and saved more than three times as much horseflesh. It would be as unjust and foolish to abuse them because of the training they have received in the past, as to subject them to such training in the future.

All the fifteen cavalry regiments in the Boer War were armed with swords—that is to say, for eighteen months 6,000 swords have been employed in skilled and vigorous hands for the purpose of carving and transfixing Boers. Think what energy this represents. Think of the cost to the State! Think only of the mass of steel represented by 6,000 swords and 6,000 scabbards! What are the results? How many Boers have been killed by all these swords, I wonder? Five? Ten? A dozen? I never heard of one, except one that was killed by an officer; and he was shot by the officer's revolver. But let us say that 20 Boers were killed; even 20 is a poor dividend on the capital and labour employed. Fancy if cartridges had been used instead! Fancy if they had carried the weight of the sword every day in ball cartridges! Then on how many occasions, when the cavalry have been pulled up for want of ammunition, would they have been able to press the matter home! Or if you had taken away the swords, and let the horses have the benefit of the lightened burden, we might have caught De Wet!

I should just like to press this argument to its logical conclusion. Why did not the cavalry kill the Boers with their swords? They were well mounted, they had bigger and better horses than the Boers, and their horses were fed on corn, while the Boer ponies were only fed on grass. The Orange Free State is a beautiful country for cavalry, whatever may be said to the contrary. Surely, it is a pertinent question, Why did not the cavalry gallop after the Boers and slash them to pieces with the sword? The only answer I can see is, that the Boers used to get off their horses, and shoot at the cavalry when they saw them approaching in the distance. That is no answer to the question, Why did not the cavalry ride on, disdaining the fire, and close with the enemy at all costs? "That is what they would have done in *my* day." Well, let me try to explain. I remember one morning, in South Africa, riding up to a cavalry brigadier whose friendship I had the honour to enjoy. His brigade was in action. There was a skirmish going on, and his patrols were engaged all along the front. We arrived at the top of a grassy ridge, and there, two miles away, we saw a beautiful swarm of nearly 2,000 Boers in the open, regarding us with their customary calmness and complacency. The brigadier took a long look at them, and then he said: "By all the rules of war I ought to get up as close as I can, and then charge them, and cut them to pieces. But what will happen if I do? If we go at all we shall have to go quickly, because they will shoot at us all the way. If we do not go quickly we shall lose heavily. Before we get there our horses will be blown, and when we get within 600 yards or so the Boers will mount

their horses again, having fired at us all the way, and their horses being fresh, will just gallop a little bit further on. What shall we have to do then? Either we shall go on, in which case our horses may be blown altogether, and we may get into trouble, or we shall have to come back, and be peppered all the way back. We shall lose 30 or 40 horses, and perhaps 20 men, and what shall we have to show for it? That is not quite the game for cavalry to play." I quite agreed that it was not.

Every cavalry officer who has been on service in South Africa, I have no doubt, can find other instances of a similar nature, when it was quite impossible to close with the agile and artful enemy, and there was nothing to do but take him on at his own game of long shooting. If the Boers had stood, or met our charges with counter-charge, it would have been all right, and they would have been overwhelmed by superior drill and superior weight, just as in the same way in a European war our squadrons would be overwhelmed by the superior numbers of the Continental cavalry. But the Boer followed his own lines. He thought out these things for himself; he did not take the game on on other people's terms; he made his own trumps.

And so the cavalry found that their swords, although they might look very bright and fierce in time of peace, were no use whatever in time of war. It is very interesting to know what they will do when they come home. Will they put away the teachings of the weather-beaten school of South Africa, and put on again the whole panoply of peace? Will they say the Boer War is an exceptional war, which it was; that the Boer is an exceptional fighter, which is undoubtedly true; that the country is unsuitable to cavalry, which I cannot agree with; and that when the Boers win they win in the wrong way, by non-regulation methods, and that ought not to count? Or will they boldly face the facts as they are, and not as they would like them to be, and recognise that the day of cold steel for the horseman and of shock tactics is a thing of the past? I think surely the time spoken of by the Prophet Isaiah has come at last, when "They shall beat their swords into plowshares, and their spears into pruninghooks." Modern war is fought with fire-arms, and if the horseman will adapt himself to the new conditions his rôle on the battle-field will be greater than ever. But if he still clings to the weapons of barbarism, long knives and sharp spears, he may be only a ridiculous anachronism, a curse to himself, an encumbrance to the Army, and an unjustifiable expense to the nation. I am in favour of throwing away all the ironmongery, and arming the cavalry entirely with rifles. It may be said by my friends in the 4th Hussars, "You are a renegade; would you turn us into mounted infantry?" Certainly not, because, in the first place, the cavalry and the yeomanry would violently resist being turned into mounted infantry, and their resistance would very likely be effective; in the second place, with all the gallantry of the mounted infantry, criticising them not as individuals but as an arm, I do not admit for a moment that mounted infantry has been a great success in the Boer War. In the first place, their riding was not good. One Boer said they were chiefly occupied in holding their hats on—that is a libel which I do

not associate myself with. Their scouting was not good. They had not been trained in reconnaissance and screening in time of peace. In the third place, their horsemastership was not good, and on the column I accompanied from Bloemfontein to Pretoria (General Ian Hamilton's) three times as many horses of the mounted infantry died as those of the Regular cavalry, and that from the same work under the same conditions. Somebody said the Boer was the best mounted infantryman in the world. But the Boer is not a mounted infantryman: the Boer is a rifle-armed cavalryman, and nothing is more untrue than to say he is a mounted infantry soldier. He has a beautiful seat, rides recklessly and boldly over the most rocky ground, and is essentially the dragoon of the past generation. We have to take Albrecht's advice, the commandant of the Free State Artillery, who said: "You do not want to teach your infantry to ride, but to teach your cavalry to shoot." There is nothing new in this. Nothing ever is new. The more things change, the more they remain the same. If you like the glitter keep the cuirassier, keep the Life Guards with their beautiful cuirasses and helmets. We are a rich country and can afford it. If you like the flapping of the lance pennons keep the lancers—they look picturesque, and form a link with the past. But I claim that the time has come when we should restore the historic character of the Light Dragoons and of the Carabiniers, who are the true fore-runners of the rifle-armed cavalry of the present day and of the future.

In so far as these remarks of mine apply to the Regular cavalry they apply *a fortiori* to the Yeomanry. What were the Yeomanry? In the first place, the Yeomanry are probably among the best fighting material in the world; and, in the second place, they were sham cavalry—a delusion, a humbug, and a wicked waste of money. They play about at shock tactics without even doing it well, because how could they in ten days learn what it takes a cavalryman more than three years to learn—correct drill in the field and manœuvres? So artificial was the organisation of the Yeomanry, that when they were wanted for real war a force had to be made up out of them differing in the character and organisation of every unit—which differed in uniform, which differed in weapon, which differed even in name—and that force rendered the most distinguished and effective service during the war; and every success which it attained was clearer proof of what a waste the old organisation of the Yeomanry was. I rejoice that in the new scheme of the Secretary of State for War—a scheme about which perhaps more will have to be said elsewhere—provision has been made to re-organise the Yeomanry on a basis which will enable them to give full effect to the magnificent material which is undoubtedly incorporated in that force.

Out of all this there comes the main lesson of the South African War to the British Army. Nations must think out their own style of warfare for themselves. Where would the Boers have been if they had drilled their burghers into battalions and regiments of lancers and hussars? It does not follow that because these things are adopted by some countries and some people, that therefore they are the only way to

win in war. It does not follow, for instance, that because the British had regiments of lancers, therefore the Boers would have been well advised to have had regiments of lancers too; nor does it follow that because the French and Germans have conscription, therefore we in Great Britain should be well advised to have conscription too. On the contrary, nothing seems more clear in this intricate subject than this, that the certain road to ruin is to play exactly the same game as your enemy, only not to play it quite so well, or with quite so many men. The only chance for a weaker Power—and we must recognise that in land operations we may be very easily the weaker Power—lies in unexpected and original variations from the traditional systems of its most probable antagonists; and so I say, without hesitation, let us abandon once and for all our servile imitation of European methods; let us decline to play the Continental game of soldiers on the scale of one inch to a mile: and let us develop our unique and peculiar resources to meet our unique and peculiar dangers; and, within the protection of a fleet which must be supreme at sea, let us give the fullest effect to that enormous volume of high-class voluntary effort here and in the Colonies which this country enjoys, which no other country enjoys or has ever enjoyed; so that instead of trying to manufacture a miniature German Army in England, we shall build up, in accordance with the national genius of the British people, a British Army for the British Empire.

The CHAIRMAN (General the Right Hon. Sir Redvers Buller):—I am in rather a difficulty, because I was away from London when I was asked to take the Chair at this lecture. I telegraphed at once and said: "What is the lecture about?" And I was told "Some Impressions of the late War." I was very glad indeed to take the Chair at the lecture, if only out of compliment to a man I know to be a most gallant soldier in the field, and to a man who certainly has endeavoured to use his peculiar talents to the best advantage of his country. I know that the lecturer has great powers of observation, a very rapid comprehension, and I do not think I do him an injustice if I also say he has the courage of his opinions. Therefore, I had hoped there would have been a discussion, and that under cover of that discussion the hour for closing the meeting would have come before I was called upon to say anything; but I understand there is to be no discussion, and that I am expected to say something on the lecture. I would ask you, in laying to heart and making a note of the advice the lecturer has given you, to remember that no man really even yet can see more than one side of this late war. I think he has brought forward, though possibly almost unknown to himself, the most important side to-day, for in the three subjects he has touched upon—the Press, the Artillery, and the Cavalry—he seems to me to have emphasised most strongly the absolute necessity for better instruction. With regard to correspondents, I gather that he wishes to have a class of more highly-trained correspondents. With regard to the artillery, his propositions, I think, if they are worked out, really come down to the fact that artillery officers require in peace-time more field training, and field training of a much wider nature, and a chance of handling a larger number of guns over broken country, a sort of training, in fact, which they have not until quite lately, and hardly even now, much chance of obtaining in England. The same is true of the cavalry. The cavalry have been trained at Aldershot in shock tactics, because the nature of the ground there practically admits of almost nothing else. Whether the lecturer is right in desiring to abolish shock tactics I leave to others, but the essence of his remarks is to point out that the training has been insufficient. The real reason it has been insufficient is, that the ground over which

the training has been conducted has not been wide enough to give to the training that general character necessary for an army fighting in all countries, as ours has to do. There is one other point I should like to emphasise, and that is, that whatever deductions we make from the Boer War, let us never forget that in that war we have had this peculiarity, that the rules that have been accepted as rules of strategy and rules of tactics really did not apply fully, because we have had an enemy who has had no fixed base—they had no particular strong place of arms. They had nothing which if you took you controlled their country. They were a pastoral people living in a pastoral country, and they had as good a home a hundred miles off as they had in the particular country in which they were fighting. All through the Transvaal it is the practice almost of the whole of the inhabitants to change their place of dwelling twice in the year. They live half the year in the high veldt, and go down to the low veldt, and then back again, and consequently they were at home over an immense area of ground; and their power of retiring before our forces and gathering again in places we least expected them was a power, I think, that was much greater than would be possible to any European Army we might possibly have to fight. I think in drawing military conclusions, and in forming rapid judgments as to whether our artillery drill is right, or whether our cavalry are trained in the best way, we must remember that we were fighting an enemy that possessed unique opportunities for annoyance. They did not, as a rule, really fight. They always, if they could, got away and came again. There are very few countries, and as the world is becoming more closely populated and more civilised there will be very few except savage countries in which such a policy is possible. So do not let us be in a great hurry to imagine that all the difficulties we have met and all the dangers we have had to face in the Boer War are likely, or even probable, to recur when we are fighting against a more civilised enemy in a more civilised country. Those, gentlemen, are the thoughts that occur to me as I listened to the able lecture, and I only ask you to allow me in your name to thank the lecturer for the most eloquent and most thoughtful lecture.

THE SOUTH AFRICAN WAR OF 1899-1900.

Translated by permission from the "Jahrbücher für die Deutsche Armee und Marine."

(*Continued from June* JOURNAL, *page 758.*)

PART II.

The Theatre of War.—According to Sievers, the tableland of South Africa consists of several districts differing in climate, in degree of cultivation, and in the nature of the ground. The districts which we have to consider with reference to the war are Cape Colony, the plateau of the Boer States, the Kalahari Desert, and the basin of Lake Ngami.

In Cape Colony, the ground rises on all sides from the sea to the interior in three abrupt steps. The stretches of level ground between these steps are called Karroos, or *hard plains.* The highest points in these rocky steps are the Drakensberg Mountains in the east, with peaks rising to 11,200 feet, and passes 6,600 feet high.

The Boer States form, roughly speaking, a plateau sloping to the north-west. This plateau is called the Hooge Veldt, and is traversed by single mountain ranges such as the Witwatersrand and the Magaliesberg at Pretoria, with peaks rising to 6,600 feet. With the exception of these mountain chains, the wide, treeless grassy plain is broken only by isolated flat-topped hills, which often serve as landmarks for several days' journey.

On the north and west the country is bounded by the endless Kalahari desert; to the south and east the plateau slopes down to the saucer-shaped depression of Lake Ngami, which has no outlet.

The most important stream in South Africa is the Orange River, 1,100 miles long. Its principal tributary is the Vaal, which dries up almost entirely in winter. The Boer States were named after these rivers, which formed their boundaries.

The climate of South Africa is sub-tropical, with a single rainy season towards the middle and end of summer (October to March), and a dry season in winter (April to September). Although in the summer the movement of troops is hindered by swollen streams and deep roads, this period of the year is preferable for military operations to the South African winter, when every well fails, the streams dry up, and every blade of grass withers.

While the coast districts have fairly equable climates, due to the vicinity of the sea, the variations in temperature in the interior are very

marked. For instance, at Aliwal North, on the Orange River, the temperature ranges from 106° to 13° Fahrenheit. In spite of these fluctuations of temperature the climate is a very healthy one. The High Veldt is considered one of the healthiest countries in the world. Consumption is unknown there.

From a military point of view, the geography of the Transvaal is remarkable for the paucity of roads, the small population (less than one to the square mile) and the peculiar monotony of the landscape, which renders it difficult to find one's way. There are very few made roads. Most of the tracks are only passable for the wagon of the country, drawn by from six to ten pair of oxen. This renders the few lines of railway the more important. Yet these are only single lines of 3-foot 6-inch gauge. The great distances between the stations, and the steep gradients and sharp curves, still further reduce the military transporting power of these lines, so that their capabilities are about one-fifth of those of an ordinary European single line. Moreover, the impossibility of guarding these long stretches of lines, which often pass no human habitation for miles, renders these railways peculiarly liable to interruption.

According to experienced German officers, such as Hartmann, Estorff, François, and Leutwin, the South African landscape entirely deprives Europeans of the faculty of orientation. Striking landmarks, such as church-towers, wind-mills, groups of trees, high roads, and streams shining brightly in the sun here fail us utterly. Neither does the cultivation of the ground afford any features to guide us, such as fields, meadows, and woods. To find one's way over the vast, uncultivated, uninhabited, and pathless wilderness of South Africa requires the sense of locality of a mountain guide or a Cossack of the steppes. We must make allowances for these difficulties when we condemn the bad scouting of a troop of cavalry freshly landed from Europe. It is not to be wondered at that cavalry, which have perhaps never even had an opportunity of practising reconnoitring at home, should sometimes fail utterly in South Africa.

The principal form of human habitation in South Africa is the isolated farm. With the exception of the gold-mining towns, the dwelling-places are much the same, single farms on the banks of perennial streams, each house surrounded by its farm buildings and stock yards. The result is that the wide, unfenced holdings are relatively very thinly populated.

The Boer States are the only countries in Africa, except Abyssinia and the territories bounded by the Atlas Mountains, which have fixed natural boundaries such as high mountains and deep rivers.

According to the official "Staats-Almanak," 1899, the area and population of the Boer States are as follows :—

South African Republic.

Area 119,600 square miles.
Population in 1898, 691,252.

Of this number 288,750 were whites, including about 80,000 Boers, of whom about 30,000 were men capable of bearing arms.

Orange Free State.

Area 50,802 square miles.
Population in 1898, 207,503.

Of this number, 77,716 were whites, including 75,443 Boers, of whom about 30,000 were men capable of bearing arms.

Important places in the Transvaal: the fortified capital, Pretoria (population 8,000), and the gold mining town of Johannesburg (population about 150,000).

In the Orange Free State: the capital, Bloemfontein (population about 12,000).

For the last ten years, the South African Republic, which in 1885 was barely solvent, has had considerable surpluses on its annual budget. Moreover, the continuance of work on the gold mines, during a war carried on outside the Transvaal border, provides the Republic with the sinews of war. The Orange Free State is not in the same case. The finances are in good order and there is no deficit on the budget, but since the forcible seizure of the Griqualand diamond fields by England, the State has no longer an inexhaustible source of wealth like the Transvaal gold mines to draw upon. The system of Government is the same in both States; at the head of the Republic is a President, elected for five years, and under him is the Executive Council, consisting of the Vice-President, the Commander-in-Chief, and two Secretaries of State.

The legislative body consists of the Volksraad. In the Transvaal there is a First and Second Volksraad, of which only the first has any political power.

To complete this sketch we will add a few notes about Cape Colony and Natal. Since 1853 the Cape has had its own constitution and Government. England only appoints the Governor; the Ministry and the members of the two Houses of Parliament are elected by the Colonials. Besides Cape Town (51,251 inhabitants), the sea-port towns are Port Elizabeth (23,266) and East London. Kimberley (28,718) is an important diamond city. Financially, Cape Colony has never paid any revenue. Its value lies in its position on the sea route to India, and nowadays in its being, with Natal, the kernel of that British South African Empire which is the dream of the Jingoes.

Natal is a more profitable investment. It is one of the few Colonies which are not only self-supporting but have something to spare. The growing coal-mining industry is important, and helped to make Natal the theatre of war, in spite of the difficult nature of the country.

Important places are: the seaport, Durban; the capital, Pietermaritzburg; and Ladysmith, which has lately sprung into fame. Ladysmith lies in the centre of Northern Natal, which extends like a wedge between the Boer States. It commands the mouths of the principal passes over the Drakensberg barrier, and both railways leading to the Transvaal. As the natural pivot of manœuvre of the British defence of Natal, it had a

suitably strong garrison, and was prepared for provisional fortification. The part which Ladysmith played in the war is a necessary consequence of its situation.

Besides Ladysmith, the following places were of some strategic importance during the war: Sterkstrom, as a railway junction and as the key of the pass over the Stormberg; Colesberg, the rendezvous of the Cape rebels; De Aar, as a railway junction; Kimberley, because of its wealth in diamonds and because of the presence of Cecil Rhodes; Mafeking, because of its garrison, which directly threatened Pretoria, and its energetic commandant, Baden-Powell; and, finally, as strategic points, Bethulie, Norval's Pont, and Orange River Station, on account of the very important bridges over the boundary river.

A number of other places acquired temporary importance when used as depôts for warlike stores. From the nature of things, in such a thinly populated theatre of war, all inhabited places, even with nothing special to recommend them, became of abnormal military value—"Among the blind the one-eyed man is a king."

If the present war is prolonged till the sub-tropical winter season, single wells and watering places will become strategic points. This, as we know, happened in the Anglo-Egyptian-Soudan campaign.

The military critic must bear in mind all these factors, which do not occur in a Central-European theatre of war, in forming an opinion of the strategy and tactics of both parties.

PART III.

The Opposing Forces—England.—European military men have long been aware of England's weak points as a land Power.

These weak points are also known to the younger English officers and to some few far-seeing and unprejudiced English generals. But the majority of English senior officers in authority are blind, wilfully or otherwise, to these defects. This is a fact which has been tragically demonstrated in the course of the present war.

The two great weaknesses of the English military system are: first, mercenary enlistment, and second, the defective military training of the officers and men.

It is now too late to introduce conscription into the English Army; England has now become such a purely industrial country that this measure will henceforward be an impossibility. Only about a quarter of the lower strata of society are now agricultural labourers, and even these earn from five to seven shillings a day,[1] and mechanics and factory hands even more. These high wages explain the strong dislike felt in England to a long term of compulsory military service on very small pay. This also accounts for the difficulty in obtaining the annual contingent of recruits (33,000). For few recruits are attracted to the Army except such as have either come to grief socially or failed to earn a living at their

[1] 18s. a week would be nearer the mark.—TRANSLATOR.

trades. This explains the contempt with which the soldier is regarded in England, the gross offences against discipline and the frequent misbehaviour of the troops in peace and in war, and it also accounts for the poor *moral* of the English Army.

Bad as the material is, the training is worse. Although the arms and equipment are modern, and although during the last ten years the drill books have been revised according to modern Continental ideas, the tactical training of the English Army is out of date in the present century. It is still on about the same level as that of the allied Austro-Prussian Army of 1793.

While, for instance, para. 33 of the German Manual for Field Service lays down that:—"The principal strength of the Army lies in its being always ready for war; therefore all exercises directly bearing upon warlike efficiency, such as shooting and field training, and also the maintenance of horses in working condition, must not be restricted to any particular season of the year," the course of training of the English Army is still arranged with the same pedantic method as it was a hundred years ago. Musketry and artillery practice for the whole year are got through in a ten days' course; field training is finished off in a four weeks' course in the summer, and even the instruction of the cavalry in riding is compressed into a course of several weeks. The spare time between the different "courses" is consecrated to sport—this magic word which exerts such an influence on young Englishmen, and which is the only inducement which occasionally attracts a few of the better class of men to the colours.

The officers look upon military service as purely sport. The wearisome process of the individual training of men is left to the old non-commissioned officers (drill-sergeants and sergeant-majors). Only the musketry is attended to by an officer, and this by one officer for the whole battalion, namely, the adjutant, who occasionally shows himself (of course in plain clothes) on the range.

Like the training of the men, that of the officers—especially the colonels and generals—is sadly deficient. Till a short time ago manœuvres were confined to the two military training-grounds, Aldershot and the Curragh. It was not till 1897 that a Bill similar to our *Naturalleistungs-Gesetz*[1] was brought forward and passed with great difficulty. This Bill sanctioned the use of private ground by troops during manœuvres on payment of compensation. But this law is in practice rendered nugatory by a clause which provides that compensation for damages to crops is to be assessed by a Commission on which the parties interested are to be in a majority. *English generals are therefore still unable to profit by manœuvres on a large scale in an unfamiliar country.* The English taxpayer has now to atone for this pigheadedness (from which results the English generals' want of practice in finding their way about a strange country) by the loss of whole regiments.

[1] This law provides for billeting, impressment of carriages, and free use of private ground by the troops during manœuvres.—TRANSLATOR.

Besides these internal defects of the English Army, it is also handicapped by its small numbers and by its organisation.

Great Britain, with a population of 40,500,000, can barely mobilise 200,000 men for foreign service. This is about the same number that Bavaria, with a population of 5,750,000, can put into the field.

The English field Army provided by law for service abroad is composed as follows:—

Regular troops of the Standing Army - -	90,000
Army Reserve - - - - - -	80,000
Militia Reserve - - - - - -	30,000
Total - - - - - -	200,000[1]

A glance at the composition of the British land forces will here not be out of place. They consist of:—

a.—Regular Army.

1. The Standing Army.
2. The Army Reserve.

b.—Auxiliary Forces.

1. The Militia.
2. The Militia Reserve.
3. The Volunteers and Yeomanry.

According to the Budget of 1898-99, the strength of the Standing Army was then - - - - - - - 237,000

Deduct the Indian Army - -	73,217	105,718
,, other Colonies - -	32,501	
And there remain - - - - -		131,282

As, however, Ireland, and places like London and Edinburgh, cannot be entirely stripped of Regular troops, and as at all times of the year some 10 per cent. of untrained recruits have to be deducted, there remain only some 90,000 men, as estimated above, available for foreign service.[2]

It must also be remembered that the part of the English Army serving at home is not as good, as regards *personnel*, as the troops in India and the Colonies. This is especially the case with the infantry. Here, as a rule, two battalions are nominally linked to form a regiment. The infantry regiment is, therefore, only a territorial expression; the regimental staff is not very different from our district staff (*Bezirks-Commando*). One battalion, usually up to war strength (1,000 men), is serving abroad, the other, the home battalion, forms the depôt, and its strength is 850 men at most, including a number of recruits.

The Army Reserve (Budget estimate 83,000 men, actual strength 80,000) corresponds to the first class of our Landwehr. It consists of men who have completed their first period of service with the Army, and

[1] This number may be somewhat increased by detachments from the Army in India, as has been the case in the present war.

[2] The annual contingent of recruits is enlisted and trained in eight successive detachments.

are liable, in return for their 6d. a day pay, to rejoin immediately on mobilisation. This liability lasts from the end of their service with the colours (usually 7 years) to the end of their twelve years' engagement. These men can also be called up annually for training.

The Militia does not include the whole population, as in Switzerland, but consists, like the Standing Army, of paid and enlisted men—a sort of "second-class mercenaries." This description sufficiently characterises them. The inappropriate title "Militia" arises from the fact that these men are, in theory, chosen by ballot from the whole male population capable of bearing arms, substitutes being allowed. But this constitutional liability is annually suspended by a special law, and would only be enforced if a sufficient number of recruits were not forthcoming for voluntary enlistment.[1]

The Militia are enlisted for six years, with £1 bounty and £1 annual pay, besides which they receive when embodied (4 weeks a year) the same pay as the Regulars.

According to the British Constitution, the Militia are only liable for home defence, that is, for the defence of the British Isles. The mobilisation of the Militia can only be partial, and is subject to the consent of Parliament when sitting. In the same way Parliamentary sanction is required when Militia battalions volunteer for foreign service in Europe, that is to say, in the Channel Islands or in the Mediterranean. *The employment of the Militia in the Colonies was explicitly forbidden; and this rule was broken for the first time on the 3rd of January, 1900*, when seven Militia battalions declared themselves ready for employment in South Africa.

The training of the Militia, especially in musketry, is naturally far behind that of the Regular troops. Their value in the field is therefore very problemetical. The authorities in South Africa, for good reasons, avoided sending them to the front: they were left in charge of the long lines of communications.

Since 1867, a so-called Militia Reserve has been formed from the Militia. The title is misleading; this is not a reserve for the Militia, but a reserve for the Regular Army drawn from the Militia, intended to complete the regiments up to strength on mobilisation, in case the Army Reserve should not suffice.

The strength of the Militia Reserves, according to the 1898-99 Budget, was 30,000; the actual strength is 31,000.

The Militia Reservists are men who have served two trainings in the Militia, are between 19 and 34 years of age, and engage, for an extra annual payment of £1, to come up annually for training (2 to 4 weeks) *and on mobilisation to join the Regular Army for general service.*

The Volunteers and Yeomanry.—(Budget 1898-99, 254,000, actual strength 239,000.) The Volunteers are only constitutionally liable to service in defence of England and Scotland. (There are no Volunteers in Ireland.) These men are allowed to join and leave the regiment as

[1] In this law the embryo of the idea of universal liability to military service may be traced. But it has not got beyond the embryo stage.

they please. They are divided into separate corps. When embodied for manœuvres or when mobilised they receive pay, and have to find their own uniform: their arms and equipment are provided by the corps, which draws on this account a capitation grant of about 35s.

The Yeomanry form the Volunteer cavalry; their strength in 1898 was 10,207. They provide their own horses.

This war formed the first occasion upon which the Volunteer and Yeomanry waived their legal rights and volunteered for service abroad; the Yeomanry were even employed in the fighting line, or rather on the advanced lines of communication. This was owing to the army being short of mounted troops. As is well known, the principal achievement of the Yeomanry was the capture of Colonel Villebois.

One division of the Standing Army (about 20,000 men) is kept at Aldershot on war strength, ready for rapid mobilisation; this is the so-called field force. The shipping necessary for the transport of this field force by sea is always kept in readiness.

According to the mobilisation scheme, the whole force available for foreign service is divided into two army corps and one cavalry division. These two army corps consist of Regular troops; in the third, intended only for home defence, the infantry brigades, which are of unequal strength, are only Militia. The only cavalry provided for this third army corps is the Yeomanry, an arm which can scarcely be used for fighting in close formation.

There are no large commands in peace-time; and as, moreover, the troops of the Standing Army constantly change their stations, it is necessary to base the mobilisation scheme on the combination of single garrisons into brigades.

The Staff of all the larger units—brigades, divisions, and army corps—has to be reconstructed on mobilisation. The *personnel* is furnished principally by the Staff of the 17 district commands (which may be compared to our German infantry brigade districts) and of the 67 regimental districts (corresponding to our Landwehr districts). And as these peace staffs, before they are broken up and reconstructed on mobilisation, have an enormous amount of work of their own to do (as is the case with our German district staffs during mobilisation) serious friction is unavoidable.

The artillery are not even combined into brigade divisions; the individual batteries are directly under the orders of the general of division, as in the armies of the eighteenth century. More than a hundred years since all the other Armies of Europe learnt from the French Republican Armies the advantages of the organic combination of all troops into larger units, but the English War Office has not yet learnt this lesson. In England, only the cavalry is organised in regiments and brigades. Great inconvenience must be felt in issuing orders, owing to the battalions of infantry being designated by long-winded titles without regimental numbers.

The small proportion of cavalry and artillery allotted to the army corps is very noticeable. The "corps infantry" battalion system is another survival from the eighteenth century.

The military train is assigned beforehand to each brigade and to each division. No second line of train exists. This is probably because hitherto only a war in England has been contemplated, and the ordinary transport resources of the country were relied upon to keep the Army supplied without the help of the military train.

The time required to mobilise the 1st Army Corps is supposed to be 14 days, and for the 2nd and 3rd Army Corps four and five weeks respectively. Considering the small extent of the country and the network of railways which covers it, this seems a remarkably long space of time. The reason for this lies partly in the defects already noticed of the organisation of the Army, and partly in the peculiarities of the law of England.

The system of calling in and clothing the Reserves is very unpractical. Each Reservist receives his orders to join from the regimental district, together with his railway warrant and three shillings journey money. He then proceeds to the regimental depôt (usually not at the same station as the regiment) and then to his own unit, thus wasting time by making a double journey. Another source of delay arises from the Reservist's clothing and equipment being all kept at a central depôt at Pimlico, from whence it is not dispatched until mobilisation.

The restrictions embodied in the British Constitution form a further obstacle. None of the natural resources of the country can be touched; billeting, impressment of carriages, and the exclusive use of railways for military purposes, are all forbidden. It is only within the last three years that an Army Railway Council, which concerns itself with the preparation of mobilisation transport, has been constituted. It is not known whether the activity of this Council has produced any results. As, however, the ground-work for the preparation of schedules and way-bills—namely, the details of transport requirements of the units and depôts—is altogether wanting, the labours of the Council in peace-time, in inserting local troop-trains into the time-tables, will hardly prove sufficient in time of war.

Neither does any provision for the compulsory purchase of horses, as we understand it, exist. The whole of the horses required on mobilisation (some 14,000) are supposed to be provided by private contract previously concluded in peace-time. Every horse-owner willing to supply horses at a certain price periodically agreed upon, receives 10s. a year per horse. The horses borne on the rolls are annually inspected and re-valued by officers. So far, 40 horse-purchase districts have been instituted. A purchasing committee in each district is to buy the horses and forward its contingent to a depôt (which already exists in peace-time) within 12 days. The troops are themselves to fetch away their horses from this depôt.

This system costs tens of thousands of pounds every year, and causes an immense amount of office work. It also leads to hesitation and delay in issuing the order to mobilise. And, withal, the system does not ensure the supply of horses, as was shown at the beginning of the present war.

We may conclude, then, that in important military matters such as organisation, training of the men, troop leading as applied both to large and small units, the machinery for the issue and transmission of orders and for mobilisation, England is about a century behind the times.

That this state of things should now exist, is due to the fact that this present war is the first real war in which England has ever engaged. In the Peninsula, and at Waterloo and Sebastopol, British troops merely took part as auxiliaries in wars between foreign Powers.

The blame for the backward condition of the English Army must be attributed mainly to the self-sufficient vanity of the senior officers, who have always steadfastly refused to receive any instruction from foreign wars or from Continental peace manœuvres, and have continued to assure the public on every possible occasion that the English officer and the English soldier have nothing to learn from Continental Armies.[1]

But what is almost incredible—and the blame for this is partly due to the popular form of Government—is, that in a country so advanced in manufactures and industrial science as England, the breechloader was not introduced till 1888. To this day England does not possess a quick-firing field gun, and in the armament of her infantry she has proved inferior to a South African pastoral people.

The Boers of the Transvaal and Orange Free State.—The Boer Armies were a surprise not only to England but to the whole civilised world. Even those who considered themselves well acquainted with the Boers were astonished. Thus, just before the war, a Dutch officer, Lieut.-General den Beer Poortugael writes:—"The Boers are only capable of fighting on a small scale, in detachments of 300 to 400 men. It would be a bad look-out for them if they were to assemble their forces to strike a decisive blow, for their leaders have not learnt to handle large bodies of men, and the Boers themselves are not adapted for regular warfare."

The Standing Army of the Boer States consisted only, before the war, of a few cadres of State artillery, and a small body of police. The Transvaal artillery consisted of:—

55 modern Q.F. field guns, calibres from 1·45 to 4·72 inches.
Four 6-inch siege guns.
19 old pattern guns.
800 trained gunners (including the reserves).

The artillery is trained by Austrian instructors and wears uniform of the Austrian pattern.

The Transvaal has also a field telegraph troop and a force of 1,500 police, stationed at Pretoria.

The Orange Free State has:—

Artillery under Major Albrecht, formerly a non-commissioned officer in the Prussian Artillery:—

20 guns.
3 machine guns.
550 gunners (including the reserves).

[1] Compare *Jahrbücher*, Vol. 110, No. 2, page 173 *et seq.*

There is also a force of 250 police stationed at Bloemfontein.

The great bulk of the mobile army consists of the whole of the male population capable of bearing arms, that is, of the Transvaalers and Orange Free Staters born in the country or naturalised. These men only join the colours when they are called out, which happens if danger to the country arises from within or without. They know nothing of drill, and have no uniform. They are, therefore, not Militia, but irregular troops, which the State provides in time of need with arms and ammunition and supports, at the public expense.

The Boer troops may be defined as "Irregular sharpshooters armed by the State and riding their own horses, subject to a general obligation of military service, but only joining the colours on mobilisation."

The African traveller Lippert thus describes the Boer character:—"The Boers may be compared to the North Germans, but are more intelligent. Like them, the Boers hate taxes and legal documents, and are litigious and tenacious of their legal rights, but are helpful and hospitable to one another. It is only towards Europeans that their manner is reserved and repellent."

Their military qualities are: A burning love of their country, firm religious faith bordering on fanaticism, and the fixed conviction that God will protect their rights; a patriarchal reverence for those in authority, for the older men, and for the heads of families—all these are qualities which have to supply the want of discipline among them, and are in fact quite capable of replacing "discipline" in the English sense of the term. Other qualities of the Boers are imperturbability and tenacious endurance; their wants are few, and through practice as hunters, constant living in the open air, and fighting with the natives, they have acquired a remarkable sense of locality, wonderful skill with the rifle, and cleverness in the art of taking advantage of the ground.

The Boer is—what is seldom found in European Armies—an individual long-range marksman; that is, at ranges at which Continental infantry is content to shoot at stretches of ground and has to resort to volley-fire to produce any effect, the Boer still aims and shoots at single men, because his well-trained eyesight enables him to pick out the small target and to bring his sight into line with it.

This quality of the Boers is so peculiarly their own, as to render all comparisons—such as with the Swiss Militia—mere waste of time.

The war organisation of the Boer Army corresponds to their peace sub-division into territorial districts.

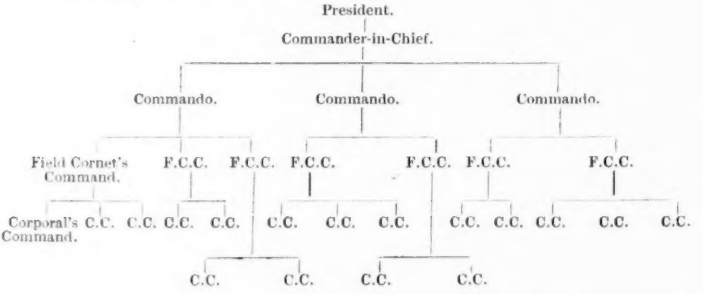
The President is in supreme command of the Army. The "Kommandant-General" is the Commander-in-Chief. This office was filled by Joubert before the war; Botha now commands in the Transvaal and Grobler in the Orange State. These personages are familiar to newspaper readers.

Both States are divided into districts, each district under a commandant, whose duties in peace and war correspond with those of our infantry brigade commanders.

All the men of a district liable to military service—that is, those between 16 and 60—constitute a "commando" in war-time. The strength is about that of a brigade.

Each district is again sub-divided into from two to six circles (Wikjen), each under a field cornet, who acts as administrator in peace-time and commands his unit in war. Each field cornet is assisted by an adjutant. The burghers of a circle constitute a field cornet's command, and this again is sub-divided into family sections, each of which is commanded by the senior member of the family, known as a "corporal." Thus these "corporalschafts" are already united in peace-time by the ties of kindred.

The war organisation of the Boers may be represented by the following diagram :—



It will be understood that the different commandoes, field cornetcies, and corporalschafts vary considerably in strength.

The first line of the Boer Army, liable to service at the first call to arms, consists of the men between 18 and 34 years of age. Those from 34 to 50 form the second line. Those between 16 and 18, and between 50 and 60, form a sort of Landsturm.

The Transvaal State Almanac for 1899 puts the first line at 15,696 men, the second line at 9,050, and the Landsturm at 4,533; or a total of 29,279 men. Including the artillery and police, the total strength of the Transvaal Army may be reckoned at 32,000 men.

For the Orange Free State, the "Almanac de Gotha" for 1899 gives the following figures:—First line, 22,500 men; second line, 8,000 men; total 30,500 men.

As a matter of fact, the combined Boer Army, including some foreign volunteers, reached a total of about 60,000 men; and after the first victories this strength was for a time increased by about 10,000 insurgents from Cape Colony and Natal.

The mobilisation of the Boer Army is the simplest and quickest in the world. The field cornets receive their orders by telegraph, and they send out mounted messengers to the farms and villages of their circles. When he gets the message, the Boer flings his rifle and bandolier across his shoulders, takes a week's or a fortnight's provision of dried meat, and mounts his horse just as he stands. On the self-same day the

corporals' commands fall in at the field cornet's muster place; on the next day the field cornets' companies unite into commandoes. Allowing for the occasional use of the railway, the whole of the first line can muster on the frontier threatened in from three to four days. Unfortunately, the leaders of the Boer Army did not understand how to profit by their power of rapid mobilisation and concentration.

The Orange Free State has no permanent fortifications. In the Transvaal, the capital, Pretoria, is surrounded by a chain of 12 modern heavily-armed forts. Besides these, the frontier fortress of Komati Poort covers the railway where it enters the Transvaal from Delagoa Bay.

GENERAL STAFF DUTIES.

[COMMUNICATED.]

THE recently issued report of the Committee appointed by Mr. Brodrick to inquire into War Office administration is so businesslike and instructive a document, and shows throughout such a grasp of the principles of sound organisation on the part of its framers, that it has practically silenced criticism. Certainly no one who has studied that report can help feeling grateful to Mr. Dawkins and to those who have so ably assisted him for the publication of this lucid exposition of the weak points in the present system at Army Head Quarters and for the suggested reforms. There is, however, one thesis advanced by the Committee so important in itself, and so likely to be misunderstood in a commercial country, that its acceptance without full enquiry is to be deprecated. Asked by Mr. Brodrick to suggest amendments of procedure "which would bring the work of the War Office more into harmony with that of large business undertakings," the Committee reports that, in its opinion, "the vast extent and the great diversity of the work centred in the War Office differentiates it from that of a large business undertaking only in degree." The question, therefore, as to whether the methods employed in the management of a railway company or of a great industrial business are equally applicable to Army organisation is one that requires careful attention. In one respect, at any rate, the analogy will be found defective, for whereas the business man has usually to concentrate his attention mainly on a present state of affairs which remains fairly constant from day to day, the entire efforts of the military administrator, on the other hand, except in so far as he has police duties to provide for, should be directed wholly to a contingency more or less remote and uncertain, for which, owing to its nature, effective rehearsal is well-nigh impossible. Certainly, in no branch of human activity, other than in a Navy or an Army, is it possible for a man to spend his whole life without even being called on to face the one contingency for which he exists professionally.

Preparation for war is, then, mainly a speculative and theoretical business, or, under the most favourable circumstances, the nature of the arrangements made, as far as modern warfare is concerned, is based either wholly or in part on the experience of war gained by other civilised nations. This being the case, the part of the thinker and of the trained observer in the preparation of the national forces for war must obviously be a very important one, unless those forces are destined to find themselves, when the day of battle arrives, armed with obsolete weapons,

trained on principles that are based on altogether erroneous *data*, and possessing an organisation quite unsuited to the circumstances of the age. That a theoretical element enters into the successful prosecution of many commercial organisations is not denied, and it may be that this element, in view of the complicated nature of modern industry, and owing to the keen rivalry between nations for the markets of the world, is destined to receive much more definite recognition among business men in the future than it has in the past; but however this may be, such an element can never, for two reasons, acquire the same importance in the affairs of peace that it already possesses in all that has to do with the preparation of an Army for war. The first of these reasons is that, as has been already pointed out, almost all preparation for modern war is based wholly on theory; the second reason being that, under the modern conditions imposed by the railway and the telegraph, an opportunity is seldom offered in war nowadays of rectifying an initial error in training or in organisation. Whereas in commerce the ground which a firm or a nation has lost, owing to the superior trade methods of some more wakeful rival, may in time be regained by a vigorous effort; such remissness in the affairs of war leads, at least, to humiliation and a serious loss of national self-confidence, even should the people or the empire concerned be happily spared a Jena or a Sedan.

Perhaps, however, the most cogent argument against conducting the affairs of an Army in peace wholly on the lines of an industrial concern will be found in a consideration of the consequences that have always ensued whenever the theoretical factor in war preparation has received insufficient recognition, and has been allowed to remain an integral part of the administrative and executive duties of the military hierarchy. Under such a system wherever tried, the tendency, not unnaturally perhaps, has always been for the various heads of departments at Head Quarters, and for the staff officers in district offices, to concern themselves almost exclusively with returns of all kinds, recruiting questions, garrison duties, ceremonial parades, and such-like routine matters which imperatively claim their attention from day to day, to the neglect of those weightier but less pressing questions which, in peace, are only too apt to be regarded as the fad of the pedant and the doctrinaire, but which, as soon as an army takes the field, at once prove to be of supreme practical importance.

There is, moreover, a further reason referred to by General Bronsart von Schellendorf in his admirable work on General Staff duties for giving to the theoretical element a special place apart in the military organisation. To expect that any one man can devote his attention equally to matters so essentially different as the practical details of peace administration and the theoretical development of war policy and war preparations, is described by the eminent German writer as nothing less than "a terrible mistake," if only for the reason that "it would be impossible that a man would be found who . . . . . was equally master of the art of military administration and of handling armies." However much this dictum may meet with acquiescence, or the reverse, no one probably will be found to deny that the qualities of intellect and the kind of education

that make for success in the sphere of administration during peace do not alone suffice to fit a man to deal with the higher questions of war policy, or that administrative experience in the daily routine of a staff office is, in itself, a training for the business of war.

But be the cause what it may, the practical effect of a refusal to recognise that the preparation of an Army for war is an art in itself, and is quite distinct from the business of administering an Army in peace, has invariably been the same. In such circumstances a military organisation is gradually evolved which may, it is true, be admirably suited to meet the requirements of peace-time, or which is, at the best, framed to fulfil conditions of warfare that modern progress has already rendered obsolete. Such an organisation has, however, always failed when tested in war, and the eventual success of an Army trained and administered on what may be termed purely business principles has ever depended on the happy chance of some man of genius being found in the time of need to improvise in the field a system suited to the conditions of active service. Thus a Frederick, a Napoleon, and a Wellington, each in his turn, gradually organised his Army for war on lines of his own fashioning, and each did this during hostilities. But no sooner was the individuality of these men withdrawn than their Armies fell back into the old humdrum ways and soon degenerated into mere peace machines. Jena, the Crimea, and the events in Lorraine rather more than thirty years ago, are sufficient object-lessons, to quote no others, of the terrible dangers to which a country exposes itself if it keeps its eyes fixed on the glories of a past generation and wilfully neglects the military reforms that human progress from year to year renders necessary.

It was the recognition of these dangers that first produced in the philosophic German mind the conviction that the practice of dividing the affairs of an Army under two heads only—viz., administrative and executive functions—was such as had failed in the past, and always would fail, to ensure adequate preparations for war being made. The events of the Jena campaign could not do otherwise than convince men like Scharnhorst, Müffling, and Gneisenau that, if Prussia was ever to regain her former high place in Europe, the organisation and the training of her Army must in future proceed on lines altogether different from those that had been followed in the past; and among the many changes in the Prussian military system which occurred after 1806, none has been of more far-reaching effect than the gradual divorce during peace of the theoretical element in the organisation and the training of the Army from the administrative and executive functions.

A new factor in Army organisation was, so to say, discovered by the Prussian reformers, and this factor can best be summarised in the term "General Staff duties." The nature of those duties is nowadays well known to all students of foreign Armies. Broadly speaking, they may be said to comprise the elaboration of schemes of offence and defence, the continual development of military knowledge of foreign Armies and foreign countries, the scheme of mobilisation of the national forces, peace manœuvres, the compilation of military history, surveys, and

map-making, and the preparation of schemes for the use of railways in war. Not the least important function of a General Staff is the constant observation of scientific progress in all its branches, with a view to applying to military purposes and developing to the utmost any invention or mechanical improvement which could possibly be of advantage to an army in the field. Above all other considerations, it is the duty of a General Staff to ensure that the knowledge that it acquires is applied to the training, the education, and the organisation of the Army, that thus the military forces of the country may, from year to year, be constantly developed to meet the requirements of an ever-changing age.

A brief examination of the duties just described shows that, with the possible exception of survey work, the functions of a General Staff cannot correctly be described as either administrative or executive. They are consultative, advisory, observative, educational, and scientific. They stand in a category by themselves, and it is interesting to note how the Prussian authorities, realising this fact, dealt with them.

The consolidation of the General Staff as a distinct body under its own chief was a gradual process, and it was not till 1821 that this body ceased to act under the directions of the War Minister, who was, and still is, under the Sovereign, the administrative head of the Army. In that year the Chief of the General Staff obtained an independent position directly under the King, which he has retained to the present day, and the distinction between General Staff duties and administrative duties thus became clearly defined.

Like the War Minister, the Chief of the General Staff is a permanent official, and he is thus able to develop and carry out a continuous and far-sighted military policy, which he certainly could not do if he held his post for a limited period only. The periods, therefore, for which the different Chiefs of the General Staff in Prussia have held the appointment since 1821 possess some interest. They are as follows :—

Lieut.-General von Müffling - -	1821 to 1829
Lieut.-General von Krauseneck -	1829 ,, 1848
Lieut.-General von Reyer - -	1848 ,, 1857
Field-Marshal von Moltke - -	1857 ,, 1888
Field-Marshal von Waldersee -	1888 ,, 1891
Lieut.-General von Schliefen - -	1891 to date.

To assist the Chief of the General Staff in his very important functions, a large number of specially selected officers is constantly employed, almost all of whom have passed through the War Academy or Staff College; and, seeing that the management of this institution is directly under the Chief of the General Staff, who also determines the appointment of its professors, it may be regarded as certain that the General Staff absorbs yearly the pick of the Staff College students as they complete their course.

As is well known, the body of officers who form the General Staff is divided into two distinct portions. In Berlin itself is one portion, called the Great General Staff, which works directly under the Chief of

the General Staff himself, and, in fact, forms his office. The other portion is employed with the troops, one or more General Staff officers being appointed on the nomination of the Chief of the General Staff to the various army corps and divisional staffs. But, as showing the limitations of the responsibilities of these General Staff officers, there are as well on army corps and divisional staffs, in peace and war, certain Staff adjutants—not necessarily Staff College men, but usually officers who have succeeded as regimental or battalion adjutants—whose duty it is, in peace, to deal with all purely administrative matters and with details of interior economy, and, in war—to use von Schellendorf's words—to act "in all matters not immediately connected with military operations."

The total strength of the German General Staff was, till quite recently, as follows:—

	Officers.
Great General Staff - - - - - -	56
Employed on scientific duties (*e.g.*, railway and survey work) under Chief of General Staff - -	78
Attached for duty to General Staff - (about)	150
General Staff officers employed with army corps and divisions - - - - - - -	142

The total number of officers working under the supervision of the Chief of the General Staff in peace is, therefore, slightly over 400, the duties of the great majority of these officers being, as already stated, in no sense administrative or executive.

As demonstrating the preponderating importance attributed to the theoretical element in war preparation abroad, it is interesting to note that the total number of officers and officials working under the War Minister in Berlin is only 113, as against about double that number employed in the office of the Chief of the General Staff.

To complete this brief sketch of the German General Staff, it remains only to add that the officers belonging to it wear special facings on their uniform, and the advantage is thus gained that they are easily distinguished on active service and at manœuvres.

It is, however, the principle underlying the existence of the German General Staff, not the details of its organisation, that is of importance, for the soundness of that principle was triumphantly indicated in 1866 and again in 1870. The same principle, too, has since 1870 been adopted in the Armies of every Continental Power, and without question it is to the existence of a General Staff formed and trained on the German model that the striking military successes of Japan during recent years must be attributed. How far this same principle—viz., the discrimination in Staff work between peace routine duties and war preparation—has been applied in, or is applicable to the circumstances of, the British Army will now be considered.

II.

"There is really no such thing at all in the English Army as a General Staff regarded as a special body of officers. . . . . The

reason for this is to be found in the perfectly distinct and peculiar organisation of the English War Office."

These words, although penned more than 25 years ago by General von Schellendorf, represent to-day almost as accurately as they did when they were written the Staff arrangements of the British Army. In other words, no attempt is made in our Army, as in other Armies, to discriminate between the duties that appertain to war preparation and the administrative functions of the peace routine, for, as we have already seen, that distinction represents the supremely important principle involved in the existence of a General Staff. Before, however, we proceed to enquire whether that principle is applicable to the military circumstances of the British Empire, some brief description of the distribution of English Staff duties will, perhaps, be excused in the interests of readers not intimately acquainted with the organisation of the War Office.

At the War Office, as is well known, all military duties, whether they refer to peace or to war, are divided between five main departments under the Commander-in-Chief, the Adjutant-General, the Quartermaster-General, the Inspector-General of Fortifications, and the Director-General of Ordnance respectively, the head of each department being responsible directly to the Secretary of State for War for all matters entrusted to his department. But, for the purposes of this examination, reference need only be made to the duties of the first three of these departmental chiefs, since, with some small exceptions, all the usual functions of a General Staff will be found to be divided among them.

At first sight, indeed, the Commander-in-Chief would appear to be invested largely with the responsibilities and the powers of a Chief of the General Staff, for he is the principal adviser of the Secretary of State on all military questions, and his department is charged with the preparation of schemes of offensive and defensive operations, with the collection and compilation of military intelligence, with the education of officers, including the administration of the Staff College and the other military colleges, and with the maintenance of detailed plans for the mobilisation of the Regular and Auxiliary forces. Such duties are, it will be seen, just those advisory, consultative, and educational functions that come under the head of General Staff duties. But a further enquiry regarding the Commander-in-Chief's position reveals the fact that he has not at his disposal sufficient leisure or trained assistance to enable him to adequately fulfil such an onerous task as falls to the Chief of the General Staff of an Army with world-wide duties to perform, and, moreover, that the direct responsibility does not even rest with him for carrying out at least one of the most important of General Staff duties.

The War Office list lays down that "all important questions will be referred to the Commander-in-Chief before submission to the Secretary of State. Questions which do not require the Secretary of State's decision, but which affect more than one of the military departments, will be referred to the Commander-in-Chief for decision."

But obviously the bulk of the questions that will thus be referred by the other departments in the War Office for the Commander-in-Chief's

decision will be purely administrative in their nature. In other words, the Commander-in-Chief is, with us, expected to perform practically the whole of the duties that in Germany are divided between the Chief of the General Staff and the War Minister. And it looks as if even this task was considered too light a one, for in addition he "holds periodical inspections of the troops"—a duty, be it noted, which abroad neither the War Minister nor the Chief of the General Staff is called on to perform, and which is regarded as a serious tax on the energies of the Emperor and of army corps commanders galore. Having regard to the many-sided executive and administrative duties that, in England, fall to he lot of the Commander-in-Chief, is it reasonable to expect that he can devote to the General Staff duties vested in his own department the amount of attention they merit?

But even putting out of consideration these executive and administrative functions, and waiving altogether von Schellendorf's objection that no man can possibly be equally master of the art of peace administration and of the theory of war, there is yet another substantial reason for doubting whether the Commander-in-Chief could, in any circumstances, deal adequately with the limited General Staff duties that are entrusted to him. For the performance of these duties there are serving immediately under him only some 26 officers, viz., 5 in the Mobilisation Sub-division, 20 in the Intelligence Division, and 1 to supervise the professional education of officers. Elsewhere than at the War Office his department is wholly unrepresented.

As von Schellendorf wrote some years ago:—"It is very difficult to conceive how so few officers can properly carry on the work and duties of what corresponds to the German Great General Staff."

But want of leisure and the lack of trained assistance are not the only factors that militate against the usefulness of the Commander-in-Chief regarded in the light of a Chief of the General Staff, for in certain essential matters the sphere of his responsibility is a dangerously limited one. Though he is charged, as we have seen, with the military education of officers, the training of the Army and schemes for manœuvres, on the other hand, are not matters with which his department has anything to do, seeing that these duties come within the province of the Adjutant-General. Of the extreme importance of such duties no one presumably has the smallest doubt, for unless adequate and constant supervision is exercised by the highest military authorities over the war-training of the Army, nothing is more certain than that strategy, tactics, and troop-leading will more and more lose touch with the requirement of the age.

But take the War Office list and see what the duties are with which the Adjutant-General is charged. In an Army like our own, necessarily highly centralised as it is, they are simply bewildering, both in their extent and in their variety. Recruiting, discipline, the maintenance of statistics and returns connected with the *personnel* of the Army, the establishment of units, the posting of officers, leave and furloughs, canteens, musketry, and gunnery instruction, and the civil employment of reservists, are a few only of the many items that are shown as appertaining

to the Adjutant-General's department. Among the subjects with which one of the seven sub-divisions of this department is charged we at last find one entry which, taken in conjunction with its surroundings, may well furnish food for thought. In the four words "Drill and Military Training" the whole science of battle-planning and troop-leading is dismissed as far as the Army Head Quarter Staff is concerned; and further it is instructive to find that this item is wedged in between such details as the management of officers' and sergeants' messes, deserters, good-conduct medals, questions about cooking, together with many other similar subjects; and further, that two officers have, under the Adjutant-General, to deal with the wealth of matter with which this sub-division is concerned. In such circumstances can wonder be felt that that science which it required years of whole-hearted devotion on the part of a Moltke to develop in Germany, and which still receives the unceasing attention of the great department over which he presided, should in this country have been much neglected, and that in consequence the tactical training of our officers and men was not, at the beginning of the Boer War, suited to the changed conditions that breech-loading guns and rifles and smokeless powder have brought about since last a British Army was seriously engaged with a civilised enemy?

If necessary, further proofs could be produced in support of the contention that in Pall Mall, at any rate, a Great General Staff, as the term is understood abroad, viz., a special body of officers under one chief whose energies are devoted wholly to war preparation and the theoretical study of war, cannot be said to exist. And it is even more certain that the General Staff officer finds no place on the staffs in districts, for there the Commander-in-Chief's department is wholly unrepresented, the division of staff duties being as between the Adjutant-General's and the Quartermaster-General's departments. Not the least sign is evident of any attempt being made to discriminate between those military duties that are closely connected with war preparation and those administrative functions which, though seeming all-important at a home station in peace, yet find no place in the organisation of an army in the field.

In fact, von Schellendorf's contention that "there is no such thing at all in the English Army as a General Staff" is fully justified.

It remains, therefore, only to enquire whether or not the principle involved in the existence of a General Staff is applicable to the military circumstances of the British Empire. On this subject Lord Hartington's Committee on Army Reform had no doubts at all, seeing that it proposed in 1890 that a central organising department answering broadly to the Great General Staffs of foreign Armies, should be established at the War Office, its object being to consider the military defence of the Empire as a whole. But even this moderate proposal was objected to by Sir Henry Campbell-Bannerman, a member of the Committee and shortly afterwards Secretary of State for War, who considered the existence of such a department unnecessary, if not actually mischievous, mainly on the ground that it would have no executive or administrative functions of its own and so would in time lose touch with military feeling. Sir Charles

Dilke and Mr. Spenser Wilkinson, in their work on Imperial Defence, published in 1892, also take exception to this proposal of Lord Hartington's Committee, as in their opinion "the proposal to form a department of the Chief of the Staff, with no authority over the Army, but with general power to meddle, rests upon a misrepresentation of the working, at any rate, of the German Army," and rightly enough they go on to urge that it is not the name of a General Staff but the principle underlying its existence that we ought to try to assimilate.

And that principle consists, as already explained, broadly speaking, in drawing a clearly defined line of demarcation between the practical duties of administrative work in peace, and those questions relating to war policy, war training, and war organisation, which, in the nature of things, must always rest, more or less, on a theoretical basis.

With this aspect of General Staff duties in mind, let the present military requirements of the British Empire be for a moment considered. Without question, one of the most notable lessons learnt during the Boer War has been this, that the expression, the "British Army," has in a large measure lost its former significance. It is the Armies of the British Empire, not the Army of Great Britain alone, that the statesman has now to consider, and it is the organisation and training for war of the Armies of Greater Britain that must engage the attention of the military administrator if, in Lord Rosebery's words, the British Empire is to be placed on a business footing. But, given such an objective, never at any period or in any country did there exist a greater necessity for keeping those functions, that properly belong to a General Staff, wholly distinct from the executive and administrative work connected with the military forces than is now the case in the British Empire; for while, on the one hand, nothing is more certain than that the various sovereign States which compose the Empire will brook no dictation from the authorities in Pall Mall on matters of detail connected with the administration and the command of their respective forces, the advantage, on the other hand, is obvious of having some special central body, with its representatives in every self-governing colony, which shall be charged to evolve and maintain a rational policy of offence and defence, and to advise the various Governments of the Empire on all questions relating to war training and war organisation. Such a body can, however, be called into existence only by the creation of a real General Staff selected from the military forces of the whole Empire, and working under its own chief, who must certainly be exempt from all executive and administrative duties.

Whereas in the future the functions of the War Office in London must of necessity become more and more confined wholly to the command and administration of the military forces raised in the United Kingdom itself, the activities of a General Staff, on the contrary, will, year by year, widen and grow in importance with the growth of the Empire.

Thus it would seem that only by the creation of a real General Staff will be rendered possible that consolidation and homogeneous working of the Armies of Greater Britain, which the war in South Africa has shown to be one of the most burning of existing Imperial problems.

NAVAL NOTES.

A NEW NAVAL DECORATION.

(From the *London Gazette.*)

At the Court at St. James's, the 15th day of June, 1901.

PRESENT.

The KING'S Most Excellent Majesty in Council.

WHEREAS there was this day read at the Board a Memorial from the Right Honourable the Lords Commissioners of the Admiralty, dated the fourteenth day of June, one thousand nine hundred and one, in the words following, viz. :—

"Whereas we are of opinion that there should exist some means of recognising Distinguished Service before the Enemy on the part of Warrant Officers or Subordinate Officers of Your Majesty's Fleet, who by reason of not holding a Commission in the Royal Navy, are not eligible for appointment to any existing Order or Decoration :

"We beg leave to recommend that Your Majesty will be graciously pleased by Your Order in Council to institute a Decoration, to be designated the Conspicuous Service Cross and to consist of a Silver Cross, with the reverse side plain, but having on the obverse side in the centre Your Majesty's Imperial and Royal Cypher E.R.I., surmounted by the Imperial Crown.

"We would beg leave to recommend to Your Majesty that this Decoration be awarded for meritorious or distinguished services before the Enemy performed by Warrant Officers or Acting Warrant Officers, or by Subordinate Officers of Your Majesty's Fleet ; and that no person shall be nominated thereto unless his services shall have been marked by the especial mention of his name in despatches by the Admiral or Senior Naval or Military Officer Commanding the Squadron or detached Force.

"The award of this Decoration to carry with it the right to have the letters C.S.C. appended to the Officer's name.

"We would submit further that the names of those upon whom Your Majesty may be pleased to confer this Decoration shall be published in the *London Gazette*, and a registry thereof kept in the office of the Lords Commissioners of the Admiralty."

His Majesty having taken the said memorial into consideration, was pleased, by and with the advice of His Privy Council, to approve of what is therein proposed. And the Right Honourable the Lords Commissioners of the Admiralty are to give the necessary directions herein accordingly.

A. W. FITZROY.

HOME.—The following are the principal appointments which have been made : Rear-Admiral H. T. Grenfell, C.M.G., to be Second-in-Command of Reserve Squadron during the manœuvres. Captains—F. R. Pelly to "Benbow" ; W. W. Hewitt to "Albion" ; R. S. Rolleston to "Nile" ; G. C. Langley as Captain-Superintendent of Sheerness Dockyard. Commanders—C. G. Treherne to "Edinburgh" ; E. M. C. Cooper-Key to "Psyche" ; R. P. Cochran to "Apollo."

The following are the principal appointments which have been made to ships for the manœuvres : Captains—A. Y. Moggeridge to "Æolus" ; W. B. Fisher, C.B., to "Amphitrite" ; W. Stoke-Rees, C.B., to "Ariadne" ; H. C. Kingsford to "Brilliant" ; H. C. A. Baynes to "Dreadnought" ; G. A. Callaghan, C.B., to "Edgar" ; F. S. Pelham to "Edinburgh" ; E. P. Ashe to "Forth" ; C. H. Robertson to "Fox" ; A. H. Anson

to "Hawke"; P. Hoskyns, C.M.G., M.V.O., to "Impérieuse"; R. G. Fraser to "Intrepid"; R. H. Peirse to "Iphigenia"; J. C. A. Wilkinson to "Iris"; F. R. Morgan to "Latona": W. J. Grogan to "Mercury"; C. H. Dare to "Mersey"; A. H. Smith-Dorrien to "Rainbow"; R. H. Stewart to "Retribution": C. H. Moore to "Scylla": H. Lyon to "Sirius"; E. Slade to "Spartan"; A. C. Clarke to "Thames."

Vice-Admiral Sir E. H. Seymour, G.C.B., transferred the command of the China station to his successor, Vice-Admiral Sir C. Bridge, K.C.B., at Wei-hai-Wei on the 26th ult., and left for Hong-Kong and England in the "Centurion" the same evening. Captain the Hon. H. Lambton, C.B., has been appointed a Commodore of the second class while in command of the Royal Yacht. Rear-Admiral H. T. Grenfell hoisted his flag on board the "Sans Pareil" on the 11th, at Sheerness, as Second-in-Command of Reserve Squadron. H.M. sloop "Beagle" left Portsmouth on the 3rd ult. for the Cape station. On the 6th ult. the third-class cruiser "Pegasus" left Sheerness for the Mediterranean, where she takes the place of the torpedo-gunboat "Salamander," which arrived home at Plymouth on the 23rd ult., and will pay off at Devonport. The second-class cruiser "Flora," from the S.E. Coast, paid off on the 7th ult. at Devonport. The second-class cruiser "Thetis," from the Mediterranean and the Cape, paid off on the 10th ult. at Chatham; and the first-class gun-boat "Ringdove," from Australia, paid off at Devonport the same day. The third-class cruiser "Racoon" arrived at Sheerness on the 14th ult. from the East Indies. The second-class cruiser "Eclipse" left Sheerness on the 15th ult. for China. The third-class cruiser "Magicienne," from the Cape, paid off on the 19th ult. at Devonport. The first-class cruiser "Blake" arrived at Plymouth on the 23rd ult., with the paid-off crew of the "Royal Arthur" from Australia, and will pay off at Devonport. On the same day the sloop "Linnet" arrived at Plymouth from China; she has since arrived at Sheerness, where she will pay off. The new first-class battle-ship "Albion" commissioned at Chatham on the 25th ult. for the China station, where she will relieve the "Barfleur" as the flag-ship of the Rear-Admiral Second-in-Command on the station; the same day the third-class cruiser "Porpoise," from Australia, paid off at Portsmouth.

The Fleet and Dockyard Reserves.—Hitherto the ships in reserve have been divided into Fleet Reserves and Dockyard Reserves, and sub-divided into the "A" and "B" Divisions of the Fleet Reserve and "C," "D," and "E" Divisions of the Dockyard Reserve. In future the Fleet Reserve will consist of "A," "B," and "C" Divisions, and the Dockyard Reserve of "D" and "E" Divisions. The "A" Division of the Fleet Reserve will consist of all ships which can be ready to join the fighting line in 48 hours. The "B" Division will consist of ships which do not require more than 30 days' repair to render them efficient for fighting purposes. Ships in this division are to have their crews told off for them, and are to be passed into the "A" Division when qualified. The ships in "C" Division are to consist of vessels that require more than 30 days to render them efficient, but which, not requiring extensive repair, are not in such a condition as to render it necessary for them to be placed in the Dockyard Reserve. Ships in this division are not to be shown in the mobilisation list, and while their stores are to be kept on board their crews are not to be told off. They are to be passed into the "B" Division as soon as the time for the completion of their repairs has been reduced to 30 days. When ships are paid off and cannot be at once taken in hand for repairs, they are to kept as efficient for fighting purposes in the "A" Division, and they are only to be passed into the other divisions when they can be taken in hand, but ships paying off into the "D" or "E" Dockyard Reserve will be passed into one of those divisions at once. Where minor defects exist which may occupy some time to complete, but which would not prevent a ship from taking her place in the fighting line in case of emergency, they will not necessitate her being placed in a lower division than "A," "B," or "C." The "D" Division of the Dockyard Reserve is to consist of ships that require a thorough overhaul. Stores are to be landed and the ships thoroughly examined, and, when their repairs are completed, the vessels must be ready to pass at once into the "A" Division. The "E" Division is to consist of vessels that are not likely to be required again as effective fighting-ships.

Channel Squadron Regattas.—The following are the particulars, which have just been officially issued, of the Channel Squadron Sailing Regatta, comprising the service sailing races and Rawson Cup Handicap, sailed at Lough Swilly on 15th and 16th May, and the Hornby Cup Handicap, sailed at Lamlash on 24th May; also of the Pulling Regatta, which was held at Lamlash on 21st and 22nd May.

The winners of cups were :—

Hornby Challenge Cup.—Lieutenant Ellerton, "Pactolus."

Rawson Challenge Cup.—Lieutenant Marten, "Diadem."

Cups presented by the Rear-Admiral Commanding.—No. 1, Lieutenant Ellerton, "Pactolus"; No. 2, Lieutenant Marten, "Diadem."

Cups presented by the Rear-Admiral Second in command.—No. 3, Mr. Kennard, midshipman, "Repulse"; No. 4, Mr. Ridgeway midshipman, "Magnificent."

Officers' Pulling Challenge Cup.—"Pactolus."

Subordinate Officers' Pulling Challenge Cup.—"Resolution."

In the following summary of results the number of points obtained by each ship, first, second, and third places are taken as equivalent to three, two, and one points respectively, with the exception of the "all comers'" race, in which the first five places have been included, counting as five, four, three, two, and one points respectively. Only places for which prizes were awarded have been taken into account, except in officers' pulling races, and in the races for the Hornby and Rawson challenge cups. The results of the race for torpedo-boats' dinghies have been included in the summary under those of the parent ships :—

Summary of Results.

No.	Ship.	No. of Points.	Prize Money.
			£ s. d.
1	"Majestic"	33	20 10 0
2	"Pactolus"	31	31 5 0
3	"Magnificent"	29	28 18 10
4	"Mars"	24	21 13 0
5	"Hannibal"	23	22 18 0
6	"Prince George"	18	15 7 0
7	"Resolution"	17	21 5 0
8	"Furious"	17	18 4 0
9	"Jupiter"	14	9 17 0
10	"Repulse"	14	12 4 0
11	"Niobe"	9	4 1 0
12	*"Pelorus"	9	7 6 0
13	†"Diadem"	5	6 7 8

* The "Pelorus" was absent from the service sailing races.

† The "Diadem was only present at the service sailing and Rawson Cup races.

It will be remembered that, as was chronicled in the *Times*, of 5th December last year, the "Pactolus," the smallest ship of the squadron, came out first in last year's results. This year, however, though she does not come out first, she nevertheless carries off the largest sum in prize money. Again she takes the Hornby Cup, curiously enough with the same boat, but with a different officer and a different rig, as Lieutenant Harrold, the winner in 1899 and 1900, left the ship last January and took his rig with him. The "Pactolus" has won the cup on all the three occasions on which it has been sailed for. The "Pactolus" also won the Officers' Pulling Challenge Cup again this year. The all-comers' race (pulling) resolved itself into a race for "centipedes," as they are called in the Navy, that is in galleys pulling 14 to 18 oars, two oars on each thwart with outriggers. The "Pactolus" won the race last year with her galley rigged that way, but this year nearly every ship tried it, and the "Pactolus's" boat only came in second. Of the other ships, the "Mars" has done much better this year.

Steam Trial.—The new first-class battle-ship "Formidable," which was built at Portsmouth and engined by Earle's Shipbuilding Company, has been completing her

trials. The ship had successfully carried out her trial at one-fifth power about three months ago, when the Admiralty ordered a series of alterations to be carried out in her joints and nickel rings, and these alterations were justified by the absence of leaky joints at the more important trial. She last month carried out her two remaining trials. The first was her thirty hours' trial at four-fifths speed. The whole of the twenty Belleville boilers were in use throughout the trial. The ship drew 26 feet 6 inches forward and 27 feet 10 inches aft. She had 257 lbs. of steam to the square inch in the boilers, and the vacuum in the condensers was 26·3 inches starboard and 26·8 inches port. There was no air-pressure in the stokeholds. The collective I.H.P. was 11,618, which gave 100·2 revolutions starboard and 101·7 port. The coal consumed was 1·89 lbs. per unit of power per hour, and the speed was 16·81 knots.

The eight hours' full-speed trial was equally satisfactory. She drew 25 feet 4 inches forward and 27 feet 4 inches aft, and had 280 lbs. of steam in her boilers. The vacuum was 25 inches starboard and 25·3 inches port. The revolutions were 109·1 starboard and 109·6 port, while the I.H.P. was 7,765 starboard and 7,746 port, giving a collective power of 15,511. The mean air-pressure in the stokeholds was ·18 inch. The speed of the vessel, taking the mean of six runs over the measured mile, was 18·13 knots on a coal consumption of 1·81 lbs. per unit of power per hour. At the conclusion of her torpedo trials she was taken into harbour to be brought forward for sea.

The Newfoundland Naval Reserve.—From the "Times" St. John's Correspondent.—The experiment of organising a Royal Naval Reserve among the Newfoundland fishermen has been attended with the most gratifying success. The initial contingent of 51 men has returned home after their six months' cruise about the West India Islands in the "Charybdis," and express themselves as well pleased with the work and the treatment they received, while the reports from Commodore Giffard to the Newfoundland Government evince great satisfaction at the aptitude and earnestness displayed by the reservists. The men were drawn from different parts of the island, and were selected as a purely experimental party. They left St. John's in November last, and, in addition to being drilled on board the cruiser, were exercised on shore in all the West India ports they visited in field-gun drill, and at Barbados were landed and went into camp, taking part in manœuvres with the garrison and Marines, which involved a 3 days' absence from the ship. Their handling of a gun on this occasion elicited a favourable report, and their smartness was commended. In the naval regatta at Barbados on New Year's Day the Newfoundlanders, competing against the picked crews of the whole fleet, won two races and got second place in another. They improvised a special flag for the occasion—a white ground with a red codfish on it—that there might be no mistake as to who they were and where they had come from, and their success was hailed with genuine pleasure by all. The admiral publicly complimented them, and their own officers gave them a dinner in recognition of their plucky work. In regard to their experience they had but one complaint to make, and this is that the food was insufficient, but it was admitted that part of the trouble was due to their inexperience in preparing the food. This matter of food is the one drawback to the general satisfaction, for a large share of their pay went to the canteen to buy extras. The reservists, who have now separated to return to their homes, will be recalled to the Service when the Duke and Duchess of Cornwall and York visit us in October next, and will take part in the naval display to be given on that occasion.—*Times* and *Naval and Military Record*.

Correspondence respecting Admiralty Works at Gibraltar.

No. 1.

Vice-Admiral Sir Harry Rawson, K.C.B., to the Earl of Selborne.

"Majestic," at Gibraltar, 30th March, 1901.

(Private and Confidential.)

My Lord,

In accordance with your directions I have held an inquiry into the question raised in Mr. T. Gibson Bowles' pamphlet relative to the works under construction at Gibraltar, being assisted in the inquiry by Major-General Sir William Nicholson, K.C.B.,

William Matthews, Esq., C.M.G., and Thomas Gibson Bowles, Esq., M.P.; and having completed the inquiry, as far as it is necessary and practicable to do so on the spot, I have the honour to submit this interim Report.

Our first meeting was held on board His Majesty's ship "Majestic," at Gibraltar, on the 23rd inst., and we continued, from day to day, the discussion of the questions laid before us.

I appointed Mr. William H. Rowe (my Secretary) to act as Secretary to the inquiry.

The following propositions were unanimously agreed to before entering into the work of the inquiry, viz.:—

a. It is better to have a dock with risks than no dock at all.

b. Even if the docks on either side of the Rock were not available in war-time, they would contribute greatly to the successful issue of the war by the aid they would have given during peace to the repairs and efficiency of the Mediterranean and Channel Squadrons.

The considerations which induced the Government to sanction the construction of extensive harbour works, docks, and workshops, on the western side of the Rock, appear to have been:—

a. Gibraltar, being a naval base, its security from attack by sea naturally attracted greater attention than its security from land attack; especially as the long range and mobility of the heavier guns, which the Boer war has shown to be available for field service, had not, at the time, been fully developed or realised. Against attack by sea the harbour on the western side is obviously superior to one on the east.

b. The greatest danger to which a fleet at anchor is exposed is from torpedo-boat attack; and it seemed of vital importance to provide, at the earliest possible date, a secure anchorage for the fleet, operating in the vicinity of Gibraltar. Such an anchorage could be utilised at night, whether it was exposed to land fire during the daytime or not. It could be completed more quickly, more easily, and at less cost than an anchorage on the eastern side of the Rock.

This was mainly due to the local conditions. Easterly winds and the long stretch of sea made working on the eastern side more difficult and expensive; while the existence of a town, Government establishments, and an old harbour on the west materially facilitated harbour extension on that side.

Viewing the problem as it then presented itself, the choice of the western side does not seem an unreasonable one; and even now in peace-time, and during war (supposing there to be no land attack) the value of this harbour is incontestable. Under any circumstances, it affords a naval base secure from torpedo-boat attack.

Recent changes, however, in the range, power, and mobility of the guns which can be mounted on travelling carriages, the difficulty of locating them, owing to the use of smokeless powder, and the possible, and indeed probable, need of increased accommodation in the future, together with the impossibility of materially extending the western harbour (which even now would not suffice for the accommodation of the Mediterranean and Channel Squadrons at the same time), render imperative the addition of a harbour, dock, workshops, and coaling facilities on the eastern side. These, under war conditions, would be invaluable.

In arriving at this conclusion, we have carefully weighed and considered the relative security of both sides of the Rock from land artillery fire, direct and indirect; it is true that absolute immunity from land artillery fire cannot be obtained on the eastern side for a harbour, but there is no doubt whatever that the eastern side is more secure than the western.

This additional security we consider sufficient to fully justify the construction of a harbour, dock, etc., on that side, even if those works entailed a very large expenditure.

* * * * * *

After taking into consideration the extent of the works already in progress, we strongly recommended that :—

a. The whole of the works on the western side, including the dredging, should be completed as sanctioned, with the exception of No. 2 dock and one-third of the adjacent workshops, also the store-houses.

b. The site intended to have been occupied by No. 2 dock should be converted into a temporary camber for small boats, etc. ; but, seeing that the coffer-dam is being formed so as to dry the area for No. 1 and No. 2 docks, an entrance should be constructed while the area is so dried, which would admit of the formation of a dock on this site, if required hereafter, without entailing the erection of a special coffer-dam in connection therewith. This would effect a saving of about :—

	£
On deck No. 2	250,000
On workshops	50,000
Total	300,000

c. A graving dock should be constructed on the eastern side of the Rock in the position selected, where it would be completely protected from direct aimed fire, and, to a large extent, if not entirely, from indirect unaimed fire.

This dock should be 700 feet long on the floor (to adapt it for the accommodation of the largest transport). It should have a blank inner end, so as to admit of future extension if desired. The depth over the sill at low water to be not less than 38 feet, to provide for the reception of the heaviest battle-ship at the maximum draught at which she could float after severe damage in action.

d. Workshops, store-houses, etc., equal to the requirements of other than large repairs, should be provided close to this dock, in suitable chambers to be formed in the Rock, adjacent to a tunnel connecting the dockyard on the western with the dock on the eastern side. These would be absolutely safe from artillery fire, and could be arranged so as to be easily accessible from the tunnel roadway, which, with the chambers on either side of it, would be lit by electricity.

e. Three moles should be constructed on the eastern side, in the selected position, to form a sheltering harbour of about 400 acres.

The two shore moles would each be about 35 feet broad and 2,300 feet in length, while the outer or sea mole, which would have to withstand the heavy wave-stroke due to the strong Levanters, would be 50 feet broad and 6,600 feet in length.

This harbour would have two entrances, one on the northern and the other on the southern face, each being 700 feet in width.

f. Provision should be made for dredging within the proposed harbour.

g. Arrangements should be provided for coaling ships in the eastern harbour, as the value of such facilities during war cannot be over-estimated ; especially in the event of the Rock undergoing a bombardment, when ships could run in there and coal or fill up with stores or ammunition during the night, with almost complete immunity from artillery fire, a condition which would not obtain on the western side.

* * * * * *

I inclose replies to the questions which were referred to us ; except in regard to the estimate of the additional cost involved, and of the probable time required for completion of the proposed works on the eastern side. This will take some time to prepare ; and Mr. Matthews will do this in London, where we propose to meet later on, in order to deal with this and other matters which have arisen out of our investigations. These will include a consideration of Mr. Gibson Bowles' proposal to provide at once a floating dock, to be placed inside the mole on the western side, there to remain pending the construction of the suggested works on the eastern side ; and, if deemed advisable, for subsequent transfer to that side.

We will then consider the question of certain changes which may be necessary in the military defence of Gibraltar as the result of our recommendations if carried out, and hold such further consultations as may be advisable with certain authorities at home.

I have, etc.,
(Signed) HARRY H. RAWSON,
Vice-Admiral.

We concur in the above Report.
(Signed) W. NICHOLSON.
W. MATTHEWS.
T. GIBSON BOWLES.

The Right Honourable
The Earl of Selborne,
Admiralty.

INCLOSURE IN No. 1.

Interim Report.

1. Under the conditions of modern artillery fire, is the eastern side of Gibraltar more secure from artillery *land* fire, direct or indirect?

Yes. The eastern side is very much more secure from both direct aimed and indirect unaimed fire than the western side.

If the answer is in the affirmative :—

2. Is the additional security sufficient to justify the construction of a harbour, or docks, or workshops, on the eastern side?

Yes. The additional security of the eastern side from fire is sufficient to justify the construction of a harbour and of a graving dock on that side; and also to justify the construction there of workshops for other than large repairs, even if these works entailed a very large expenditure.

If so—

3. *a.* Could a harbour be constructed on the eastern side in which ships could lie and coal in security from *land* artillery fire?

b. Could docks of any sort be established on the eastern side in security from *land* artillery fire?

c. Could workshops, store-houses, etc., be so placed as to be secure from *land* artillery fire?

a. Absolute security, No; but the harbour would be exposed to a very small amount of direct aimed fire; and though exposed to indirect unaimed fire, the difficulty of marking the projectiles renders a harbour on the eastern side at least fourteen times as secure as that on the western side.

b. A graving dock could be established on the eastern side in practical security, which would not be exposed to direct aimed fire (except from the sea); but which would be exposed to very difficult indirect unaimed fire.

c. Yes, in suitable chambers to be formed in the Rock, absolutely secure from land artillery fire.

4. Is it recommended that any of the works uncompleted or contemplated on the western side be transferred to the eastern side?

Yes, viz. :—

a. It is recommended that No. 2 dock should be abandoned, and a larger dock be established on the eastern side.

b. That the construction of one-third of the sanctioned workshops should be abandoned, and equivalent workshops formed in the Rock on the eastern side.

c. That the store-houses should be abandoned, and the stores stowed in chambers in the Rock.

5. In case any such transfer is recommended, would any additional or complementary works be necessary on the eastern side?

Yes, viz. :—

a. That a harbour be constructed on the eastern side.

b. That a graving dock be made in the position marked on the plan, with dredged approach.

c. That a tunnel be made for communication between the western dockyard and the eastern dock.

d. That chambers for workshops and stores be excavated in the Rock on each side of the tunnel.

6. If any such transfer of works or addition of complementary works is recommended, can a rough estimate be given of the additional cost involved, and of the probable time required for their completion?

As to the estimated cost and time likely to be expended on the works recommended, the members of the inquiry do not feel themselves in possession of adequate data to enable them to make a definite reply; and they propose to postpone an answer to these questions until their return to London, when Mr. Matthews will be prepared to submit an approximate estimate of cost and time.

No. 2.

Vice-Admiral Sir Harry Rawson, K.C.B., to the Earl of Selborne.

Admiralty, 16th May, 1901.

(Private and Confidential.)

My Lord,

In accordance with the proposal contained in the last paragraph of my letter of 30th March last, addressed privately and confidentially to your Lordship, being an interim Report on certain points relative to the works under construction at Gibraltar, I requested Major-General Sir William Nicholson, K.C.B., William Matthews, Esq., C.M.G., and Thomas Gibson Bowles, Esq., M.P. (together with Mr. William H. Rowe, Fleet Paymaster, R.N., acting as Secretary), to meet me at the Admiralty, and consider :—

a. The additional cost involved in the works we have recommended to be carried out on the eastern side of Gibraltar, and the probable time required for their completion.

b. Mr. Gibson Bowles' proposal to provide at once a floating dock, to be placed inside the mole on the western side, there to remain pending the construction of the suggested works on the eastern side, and, if deemed advisable, for subsequent transfer to that side.

We have now completed our inquiries and deliberations, and I have the honour to submit this final Report, in which Sir William Nicholson and Mr. Matthews entirely concur. Mr. Gibson Bowles, however, informed me that he could not entertain the Report, and, therefore, declined to discuss it or take any further part in our proceedings; but he will address a separate letter to your Lordship, containing the conclusions at which he has arrived on the whole subject.

Mr. Matthews has prepared an approximate estimate of the cost of constructing the harbour and graving dock which we have suggested on the eastern side of the Rock (see Inclosure No. 2), in which we concur.

This is summarised as follows :—

	£
North mole	480,000
South mole	555,000
East mole	2,960,000
Graving dock, with reclamation and dredged approach channel	825,000
Total	4,820,000

These works would take about ten years to complete.

We have not considered it necessary to estimate the cost of the tunnel, workshops, store-houses, coaling arrangements, etc., which would be required on the eastern side, as this would be a matter of detail which could be better dealt with departmentally at the Admiralty ; but, roughly, these would cost about £500,000.

Seeing that such a long period must elapse before a graving dock on the eastern side would be available for use, the question of immediately providing a floating dock for Gibraltar has received our earnest attention.

This has been considered in connection with the recommendation, contained in my interim Report to abandon No. 2 dock.

Whilst a floating dock has undoubtedly many advantages, amongst others, rapidity of construction, and, as in the case of Bermuda, adaptability to exceptional local conditions, it is unquestionably greatly inferior to a graving dock for repairing battleships and large cruisers ; and, as far as Gibraltar is concerned, the fact that it would have to occupy a portion of the very limited and valuable space available in the western harbour for berthing ships of war, and could not possibly be used on the eastern side for at least six years—viz., until the harbour works were so far advanced as to give it adequate protection, precludes the recommendation of a floating dock for that place.

To meet the requirements of the Mediterranean and Channel Squadrons, we are strongly of opinion that three docks should be provided at Gibraltar within the next few years. We have given our reasons for preferring a graving dock to a floating dock at this port. Should, therefore, any serious delay be anticipated in constructing a harbour and dock on the eastern side, we consider that it would be desirable to complete No. 2 graving dock on the western side in connection with Nos. 1 and 3, as originally sanctioned. In the interim Report we pointed out that a saving of only £250,000 would be effected by suspending the completion of No. 2 dock ; and we recommended that the dock entrance should, in any case, be constructed while the present coffer-dam is in position.

The provision of three docks on the western side would not, however, obviate the necessity for a harbour and dock on the eastern side.

With reference to our suggestion in the interim Report that the stores should be stowed in chambers excavated in the Rock on each side of a tunnel, instead of in store-houses on the western side, we understand that a saving of only £65,000 (approximately), out of a total of £130,000 estimated for them, would be effected if they were abandoned.

This, together with the many obvious advantages, of keeping present use stores in store-houses, in preference to storing and handling them in the limited space which would be available in the chambers in the Rock, suggests the desirability of still building store-houses on the western side for use during peace-time, which stores could be transferred to the Rock chambers in case of war. The reserve of stores for war purposes should be kept in these chambers, those of an inflammable nature being stowed separately in special chambers excavated within the eastern face of the Rock, away from the tunnel, where a fire could more safely and readily be dealt with than in the chambers leading off the tunnel.

We consider the proposition as to a harbour and dock on the eastern side of the Rock, if carried out, would be of great value in war-time.

* * * * * *

It is to be understood that, whilst we attach the utmost importance to the construction of a harbour, dock, etc., on the eastern side, we are of opinion that the expenditure on these works should not affect the ship-building vote, the relative importance of a strong and highly efficient fleet being paramount to all other considerations.

With reference to the original choice of the western over the eastern side for docks and harbour works, we consider that the Admiralty were wisely advised in the first instance in deciding on the western side of the Rock for this purpose. We also

consider that strong reasons existed in 1896 for extending those works. We have already dealt at length with this question in our *interim* Report.

Inclosure No. 1 contains the questions which were referred to us, showing opposite each question the replies given in the interim Report, and in this Report respectively, with the reason for alterations.

I have, etc.,
(Signed) H. H. RAWSON,
Vice-Admiral.

We concur in the above Report.
(Signed) W. G. NICHOLSON, M.G.
WM. MATTHEWS.

The Right Honourable
The Earl of Selborne.

INCLOSURE 2 IN NO. 2.

April, 1901.

Gibraltar.

Harbour and Graving Dock on Eastern side of Rock.—Approximate Preliminary Estimates.

Summary.

	£
North mole	480,000
South mole	555,000
Detached, or east mole	2,960,000
Graving dock with reclamation and dredged approach channel	825,000
Total	4,820,000

Notes.

The foregoing Estimates do not provide for the formation of a tunnel through the Rock connecting the west with the east side, nor for the formation of any chambers or store-rooms adjacent to such tunnel, nor for any workshops or stores in addition to those in the western dockyard which are recommended for execution in addition to those already constructed.

The Estimates should be considered as approximate only, and subject to revision on the completion of the engineering survey, with borings, soundings, and other data, which will be required hereafter prior to framing reliable contract drawings and specifications for the works should it be decided to proceed with the same.

It should also be borne in mind that, although there is no indication of a travel of sand, or of shingle mixed with sand, from north to south along the eastern face of the Rock, yet, in view of the enormous quantity of material of this description which lies to the northward of the Rock, it is most desirable that a comprehensive system of current observations should be carried out in connection with the engineering survey above referred to. The angles at which waves impinge on the shore on the eastern margin of the Rock during Levanters should also be noted. The plan of the harbour, and the positions and widths of the entrances indicated on the chart, should be reconsidered when these additional data are available, and the design modified, should change be considered necessary, with a view to obviate or mitigate shoaling or loss of depth, as far as it is practicable to do so, within the inclosed area after the completion of the harbour.

(Signed) WM. MATTHEWS.

Naval Manœuvres.—The following official documents have been issued from the Admiralty with reference to the 1901 Manœuvres:—

General Idea.

The manœuvre area lies between the 56th and 47th parallels.

Fleet B is cruising in the North Sea, and can coal at Plymouth, Portland, or Portsmouth. It has detachments of cruisers and torpedo craft at Plymouth, Portland, and Portsmouth.

Fleet X is cruising off the north coast of Ireland, and can only coal at Queenstown or the Scilly Islands. It has detachments of cruisers and torpedo craft at the Scilly Islands and the Channel Islands, which can coal at those places.

The whole of Great Britain below the 56th parallel belongs to B.

The whole of Ireland, together with the Scilly Islands and Channel Islands belongs to X.

The orders from the Admiralty to commence hostilities do not necessarily reach both sides at the same time.

The following forts are fortified and are placed in a state of defence:—

In Great Britain:—

Portsmouth.
Portland.
Plymouth.

In Ireland:—

Queenstown.

All other ports are unfortified, except the Scillies, Alderney, and Guernsey, which together with the vessels in those ports are to be considered proof against attack by vessels of any description.

The examination service is to be brought into operation at Portsmouth, Portland, Plymouth, and Queenstown, but is only to be made applicable to ships of war; merchant-ships are not to be interfered with.

Each fleet is to try to obtain the command of the English Channel, and of the approaches both to it and to the St. George's Channel, X's ultimate aim being to stop the trade in those waters, and B's to cover it.

Rules and Regulations to be Observed during the 1901 Manœuvres.

No rules setting forth the conditions under which ships will be put out of action will be issued. Each case must be decided by the umpires on its merits on the basis of what would be probable in war.

When two or more ships come into action the commencement of the engagement is to be marked by the firing of a gun by one of the ships engaged. During the engagement single guns are to be fired at about one minute intervals by the ships engaged.

When either side considers that he has beaten the other, he should signal "Propose reference to Umpires." If the other agrees to the reference the action is to cease. If the other does not agree the action may continue, but not for more than a reasonable time, which is to be determined by the Senior Officer present. A reasonable time under ordinary conditions would be one hour in the case of battle-ships, cruisers, and torpedo-gunboats, and half an hour in that of destroyers and torpedo-boats.

When reference to the Umpires has been settled, the Senior Officer present is to determine what ships on either side are to proceed into port to await their decision, pending which the ships detached are to be considered out of action. The Senior Officer present must take care to select as far as possible equally from both sides.

If a ship is undoubtedly torpedoed, or manifestly overpowered by a much superior force, the Senior Officer present may take the responsibility of temporarily putting such ship out of action and ordering her into port for the decision of the Umpires. In this case it will not be obligatory to order into port a ship from the opposite side.

Ships put out of action can take no further part in the Manœuvres, but must return to one of their base ports—Queenstown, Scilly, Alderney, Guernsey, Plymouth, Portland,

Portsmouth—flying the Blue Peter at the fore. They are to select a route as far as possible clear of the scene of operation, and are strictly enjoined not to communicate any information to the ships on either side which they may meet on the way.

Colliers are not to attack at sea.

Signal stations are not open to attack by landing parties.

As the 18-inch torpedo cannot be fired at a ship in a peace exercise, a destroyer is to fire a blue light by night or blow her whistle by day at the moment when the torpedo would be discharged, the tube being trained and all adjustments made as if actually firing.

Torpedoes fitted with collapsible heads may be fired at battle-ships and cruisers, but not at torpedo-gunboats, destroyers, or torpedo-boats.

Torpedo-boats are not to paint out their numbers.

Care should be taken not to expose vessels needlessly to fire from forts.

The limits of those ports which are considered proof against attack are as follows :—

Alderney.—A line drawn from the submerged end of the breakwater to the northern extreme of Chateau à l'Etoc.

Scilly Islands.—A line drawn from Menewetham through Newfoundland Rocks, Horse Point, Annet Head, Castle Bryer, Crow Point, Guthers Island, to Menewetham.

Guernsey.—A line drawn from Jerbourg Point to the southern extreme of Serk, and another line drawn from the northern extreme of Serk to the northern point of Herm and thence to Doyle Point.

During the operations ships are not to pass the limits of the Manœuvre area, and are not to enter foreign territorial waters.

List of Ships.

Fleet X.—Main Fleet.

First-class battle-ships—"Majestic," "Magnificent," "Jupiter," "Prince George," "Hannibal," "Mars," "Resolution," "Repulse."
First-class cruisers—"Diadem," "Niobe," "Hawke," "Immortalité," "Narcissus."
Second-class cruisers—"Furious," "Arrogant," "Mersey," "Rainbow," "Retribution."
Third-class cruisers—"Pelorus," "Pactolus."
First-class torpedo-gunboat—"Gleaner."
Destroyers—"Leven," "Locust," "Thorn," "Vigilant," "Osprey," "Tiger," "Gipsy," "Leopard."

Squadron Y. Base, Scilly Islands.

Second-class cruisers—"Brilliant," "Æolus."
First-class torpedo-gunboats—"Sharpshooter," "Jason."
Torpedo depôt ship—"Hecla."
Destroyers—"Lee," "Cynthia," "Sturgeon," "Cheerful," "Desperate," "Angler," "Salmon," "Mallard."
Torpedo-boats—Nos. 58, 66, 76, 98.

Squadron Z. Base, Channel Islands.

Second-class cruisers—"Thames," "Iris," "Iphigenia," "Intrepid."
Torpedo-gunboats—"Seagull," "Sheldrake."
Destroyers—"Mermaid," "Zebra," "Avon," "Bittern," "Spitfire," "Albatross," "Snapper," "Haughty," "Porcupine," "Ariel," "Contest," "Dasher."
Torpedo-boats—Nos. 55, 79, 81, 82, 85, 86.

Under Rear-Admiral at Queenstown.

Special-service vessels—"Curlew," "Seahorse," "Stormcock."

Fleet B.—Main Fleet.

First-class battle-ships—"Revenge," "Sans Pareil," "Nile," "Trafalgar."
Second-class battle-ships—"Howe," "Anson," "Benbow," "Camperdown," "Colossus," "Edinburgh."

Third-class battle-ship—"Dreadnought."
First-class cruisers—"Amphitrite," "Ariadne," "Edgar," "Galatea," "Impérieuse."
Second class cruisers—"Minerva," "Hyacinth," "Forth," "Andromache," "Apollo," "Fox," "Latona."
Third-class cruiser—"Pandora."
Torpedo-gunboat—"Onyx."
Destroyers—"Petrel," "Kestrel," "Chamois," "Recruit," "Vulture," "Crane," "Fawn," "Myrmidon."

Squadron C. Base, Plymouth.
Second-class cruisers—"Spartan," "Sirius."
Torpedo-gunboats—"Skipjack," "Renard."
Destroyers—"Bat," "Fairy," "Shark," "Opossum," "Wolf," "Panther," "Fervent," "Decoy," "Zephyr."

Squadron D. Base, Portland, Portsmouth.
Second-class cruisers—"Melampus," "Severn," "Mercury," "Scylla."
Third-class cruiser—"Prometheus."
Torpedo-gunboats—"Leda," "Speedwell."
Destroyers—"Spiteful," "Starfish," "Viper," "Havock," "Brazen," "Kangaroo," "Wizard," "Violet," "Electra," "Teazer," "Surly," "Sylvia," "Hunter," "Charger," "Bullfinch."

Under Commander-in-Chief, Plymouth.
Special-service vessels—"Antelope," "Traveller," "Tay."
Torpedo-boats—Nos. 45, 52, 53, 54.

Under Commander-in-Chief, Portsmouth, for Portland.
Special-service vessels—"Spanker," "Spey."
Torpedo-boats—Nos. 26, 27.

For Portsmouth.
Special-service vessels—"Circe," "Magnet," "Raven," "Landrail," "Trent."
Torpedo-boats—Nos. 41, 42, 49, 50.

Instructions Relative to Umpiring.

The following officers have been nominated to act as Umpires :—
Vice-Admiral Sir Robert Harris, K.C.B., K.C.M.G.
Rear-Admiral James L. Hammet.
Rear-Admiral Sir Baldwin Walker, Bart., C.M.G.

Lieut.-General J. F. Owen, R.A., has been nominated by the War Office to act as Military Umpire to decide, jointly with the Naval Umpires, claims arising between the land defences and the ships.

They will meet at the Admiralty, Whitehall, where all claims and statements for their consideration should be sent, addressed to the "Secretary of the Umpires."

In all cases of fire being opened, whether by forts or ships, on hostile or friendly vessels, telegraphic reports are to be sent by both sides as soon as possible after an engagement has taken place, and should give the following particulars :—

1. Name of ship reporting.
2. Place.
3. Date and G.M.T.
4. Names or descriptions of vessels engaged.
5. Range.
6. Time under fire.
7. State of sea and weather.
8. Formation and relative position of the opposing forces engaged.

These telegraphic reports are to be followed as soon as possible by written ones. These should be accompanied by extracts from the ship's log or signal log, by track charts when necessary, or by other documentary evidence likely to assist the Umpires in arriving at a decision.

The decisions of the Umpires are final.

No reference will be made by them to the Admiralty before arriving at a decision.

The decisions of the Umpires will be communicated to the Admiralty as soon as possible after they have been arrived at, in order that, if desirable, they may be made known to the Senior Officer on each side.

Should the Admiralty desire to communicate with the Fleets during the progress of "hostilities," and their instructions be conveyed by a ship attached to either of the opposing forces, or by any other ship, such a ship is to display the signal A. K. H.

It will thus be known that she is acting under Admiralty Orders, or is about to deliver despatches or telegrams, or to signal orders received from the Admiralty, and the respective Admirals and Senior Officers are to take the necessary steps to ensure that the orders so communicated are forwarded and acted on without delay.

If the Commanding Officer of one vessel sights another flying the signal A. K. H. he is at once to close her, so as to place himself at a convenient distance for communicating by signal, should it be necessary.

General Orders and Instructions.

The vessels specially commissioned for the manœuvres will be attached to the Coastguard and Channel Squadrons. They will assemble as soon as ready at Portland and Torbay respectively, and will be formed into two fleets, to be known as Fleet B and Fleet X respectively.

Four special squadrons composed of cruisers, torpedo-gunboats, and torpedo craft will be formed. Two of these, known as Squadrons C and D, will be attached to Fleet B, and will assemble at Portland. The other two, known as Squadrons Y and Z, will be attached to Fleet X, and will assemble at Torbay.

The bases of these special squadrons during hostilities will be :—

Squadron C	Plymouth.
Squadron D	Portland and Portsmouth.
Squadron Y	Scilly Islands.
Squadron Z	Channel Islands.

At the time appointed the main fleets will proceed to sea for the preliminary cruise, during which the ships of each fleet will be exercised and anchored at the discretion of the Admiral in Command.

On the same day the special squadrons will proceed to sea independently for a preliminary cruise, during which each squadron will be exercised and anchored at the discretion of the Senior Officer.

No vessels, except destroyers and torpedo-boats, are to coal after 21st July until hostilities commence.

The dates for the commencement and termination of hostilities will not be made known beforehand, but they will not begin before midnight, 28th-29th July. After that hour the order to commence hostilities may be expected at any time. Both battle squadrons, which are to include all battle-ships, accompanied by such cruisers and smaller vessels as the Admirals in Command consider it desirable to keep with the main fleets, are to be at sea at that hour and date, to the northward of the 56th parallel, Fleet B in the North Sea, and Fleet X to the west of Scotland. Both fleets are then to cross the 56th parallel and enter the manœuvre area.

The special squadrons are to be at their bases at midnight, 28th-29th July, after which they will be at liberty to put to sea, in accordance with such orders as they may have received.

On the conclusion of the manœuvres, the ships and vessels will proceed to carry out target practice, separately in the case of the mobilised ships, ample time being allowed for the careful performance of the practice ; in the case of other ships, separately or in company, at the discretion of the Admiral in Command.

One half of a quarter's allowance of ammunition is to be expended from the heavy, light, quick-firing, and machine guns of the mobilised ships.

A full quarter's allowance of ammunition may be fired from destroyers and torpedo-boats if considered desirable by the Senior Officer.

Only such naval stores as are necessary to keep destroyers and torpedo-boats efficient during the manœuvres are to be embarked in the depôt-vessels "Hecla," "Mersey," and "Thames" during the mobilisation. No ordnance or torpedo-depôt stores will be required.

Greenwich mean time is to be kept during the manœuvres by all ships taking part.

A copy of the ship's and signal log of every vessel taking part in the manœuvres, commencing on the earliest permissible date for commencing hostilities, is to be sent to the Admiralty with the report of the Admiral in Chief Command of each fleet.

Before the commencement of the manœuvres each battle-ship and cruiser is to make a tracing of the manœuvre area from Admiralty chart No. 2, British Islands. During hostilities the track of the ship is to be carefully plotted each day. The positions at noon and where any important alteration of course is made are to be shown. This tracing is to be forwarded with the copy of the ship's log above referred to.

The signal stations marked on the special chart, issued with the instructions for the distribution of intelligence, will alone supply information during the manœuvres.

When the target practice has been completed the fleets will return to their ports of assembly — Portland and Torbay — where the ships specially commissioned will be inspected, and thence proceed to their ports for paying off.

Appointments for the Manœuvres.

Miscellaneous.

The following retired officers have been appointed as Intelligence Officers at the centres named, appointments to date 27th July:—Captain P. C. Underwood to the "Galatea," Hull; Captain G. Pirie to the "Wildfire," Sheerness; Captain A. C. Allen to the "Victory," Portsmouth; Captain H. Swire to the "Revenge," Portland; Captain W. D. Morrish to the "Vivid," Devonport; Captain G. M. Brooke to the "Vivid," Pembroke; Commander S. D. Lacy to the "Victory," Guernsey; Commander G. Drury to the "Melampus," Kingstown; and Commander F. Spring-Rice, to the "Howe," Queenstown.

Retired officers appointed for charge of signal stations, appointments to date 27th July.—Commander E. Leverett Scrivener to the "Wildfire," Deal; Commander J. Brant to the "Wildfire," Cornhill; Commander E. P. Smythies to the "Wildfire," Dungeness; Commander R. H. Stewart to the "Wildfire," Beachy Head; Commander G. Izat to the "Victory," St. Katherine's; Commander F. Elton to the "Revenge," Portland Bill; Commander A. T. Target to the "Vivid," Lizard; and Commander A. F. Turner to the "Vivid," Prawle Point.

Retired officers appointed as Examining Officers, appointments to date 23rd July.—Commander Hans White to the "Howe," Queenstown; Commander L. F. Jackson to the "Revenge," Portland.

Commander H. E. Kellett to the "Majestic" and Commander H. Dillon to the "Revenge," additional as Coaling Officers, to date 16th July.

France.—The following are the principal appointments which have been made: Rear-Admiral—C. L. T. Courrejolles to Command of a Division of the Squadron of the North. Capitaine de Vaisseau—L. V. Marin-Darbel to "Couronne." Capitaines de Frégate—A. Rouyer to "Cassard"; A. A. Tracon to "Linois"; G. A. Festy to "Phlégéthon."—*Journal Officiel de la République Française.*

Vice-Admiral Gervais, appointed to the command of Manœuvre Fleet, embarked on board the first-class battle-ship "Bouvet" at Toulon on the 26th ult., and left for Algiers on the evening of the 27th ult., with the third-class cruiser "Galilée" and the torpedo-boat destroyer "Hallebarde" in company; the admiral hoisted his flag on his arrival at Algiers at 9 a.m. the 29th ult., and assumed the command of the fleet, issuing at the same time the following Order of the Day:—"The Government of the Republic has

done me the great honour of again conferring upon me the Command of the fleet formed by the junction of the Mediterranean and Northern Squadrons.

"At the moment when with joy and pride I place myself at your head, I address to you all, admirals, officers, and men, my most hearty greeting. My mission is to unite my efforts to yours, in order that the period of the manœuvres and the exercises carried out by this imposing force may be made as fruitful as possible in useful lessons. I therefore appeal to you for your help, and place entire confidence in your proved devotion. I shall have to ask a good deal of you, but however heavy may seem the task, you will accept it, I know, with enthusiasm, for the Navy and for France, and your duty will have been well fulfilled if at the conclusion you can say to yourselves that one step more has been made towards the preparation of that future on which we have set our minds and the hope of which vibrates in our souls."

Rear-Admiral de Bausset, Commanding the Second Division of the Northern Squadron, struck his flag on board the "Formidable" on the 14th ult. and proceeded on some weeks' sick leave, his place being temporarily taken by Rear-Admiral Courrejolles, who hoisted his flag on board the "Formidable" on the morning of the following day; Rear-Admiral Courrejolles has only lately returned from China, where he has been Second-in-Command.

It is proposed that for the future a rear-admiral be appointed to the Command of the Pacific Division instead of a captain, as at present, and that a vice-admiral be maintained in command in China, notwithstanding the favourable turn affairs have taken on that station.

After considerable delay resulting from various defects in her machinery, which developed during her trials, the first-class cruiser "Tage," the new flag-ship of the Atlantic Division, flying the flag of Rear-Admiral Servan, left Brest on the 22nd ult. for Martinique.

The course of instruction at the École Supérieure de la Marine concluded for the session the middle of last month, and the students have been distributed among the ships of the Mediterranean Squadron for the manœuvres. They will return to Paris on 3rd August, after which they will make a tour of the principal naval and mercantile ports.

Launch.—The first-class armoured cruiser "Sully," commenced in May, 1899, was launched at La Seyne, on 7th June. She is an armoured cruiser with displacement of 10,014 tons, length 138 metres (452 feet), beam 20·20 metres (66 feet). The engines are vertical triple-expansion, working three propellers, and the boilers are on the water-tube principle. The maximum H.P. is 20,500 horses, giving an estimated speed of 21 knots. With normal coal supply (970 tons), the radius of action is 6,000 miles at 10 knots, and 1,230 miles at full speed. With an extra coal supply of 620 tons the radius of action at 10 knots is 10,400 miles, and at full speed 1,940 miles.

The "Sully" is protected by an armoured belt of 18 centimetres (7 inches) thickness, and an armoured deck 5 centimetres (1·96 inches) thick, and the gun positions are protected by 23-centimetre (9-inch) armour. The armament comprises two 194-millimetre (7·6-inch) guns, eight 164-millimetre (6·48-inch) Q.F., and eight 100-millimetre (3·93-inch) Q.F. guns, eight 47-millimetre (1·85 inch), and six 37-millimetre (1·45-inch) guns, and there are also five torpedo-discharges, two of which are submerged. The vessel's total cost, including armament, is 23,863,394 francs (£954,535), and she is to be completed by 31st March, 1903.

An identical but slightly smaller ship of the same type, the "Dupetit Thouars," was launched at Toulon, on the 4th inst.

Dockyard Notes.—The new first-class armoured cruiser "Amiral-Gueydon" has been undocked at Lorient, where she was placed to have her rudder and three screws shipped, and her two submerged torpedo-tubes fitted. She has had her evaporating apparatus and tubes tested, and the preliminary trials of her machinery are proceeding satisfactorily.

The new torpedo-boat destroyer, "Épée," which was to have joined the Méditerranean Squadron in time for the manœuvres, will only commission at Cherbourg this month. She is to relieve the torpilleur-de-haute-mer "Cyclone" in the squadron.

The first-class cruiser "D'Entrecasteaux," having at last completed her repairs, left Toulon for China, on the 13th inst. The new armoured cruiser "Jeanne d'Arc" has re-commenced her trials off Toulon. When they are concluded she will be fully commissioned, and leave for Brest, where she joins the Northern Squadron.

The New War-ships.—Now the French Navy Budget has been definitely voted, it is interesting to note the nature and number of the vessels which will be put in hand during the year in Government and private yards. They will consist of two battle-ships, one cruiser, ten torpedo-boat destroyers, 12 first-class torpedo-boats, and eight submarines. The two battle-ships will each have a length of 439 feet; beam, 79½ feet; draught, 27½ feet; displacement, 14,865 tons; engines, 17,475-H.P.; speed, 18 knots; bunker capacity, 905 tons normal, or 1,825 tons of packed briquettes; radius of action with normal coal supply, 4,195 miles at 10 knots and 930 miles at 18 knots; with packed briquettes, 8,390 miles at 10 knots and 1,880 miles at 18 knots; armament—four 12-inch, eighteen 6·49-inch, twenty-six 1·85-inch, and two 1·45-inch guns; also 5 torpedo-tubes, three above water and two submerged; complement, 42 officers and 751 men. They will be known as "A8" and A10"; the former will be built at Brest, and the other in a private yard. They will cost £1,421,700 and £1,416,550 respectively. The cruiser "C18" will be built at Toulon. Her length will be 480½ feet; beam, 70¼ feet; draught, 27 feet; displacement, 12,500 tons; engines, 27,500-H.P.; speed, 22 knots; bunker capacity, 1,320, or with packed briquettes, 2,100 tons; radius of action, 7,500 and 12,000 miles at 10 knots, and 1,025 and 1,590 miles at 22 knots; armament—four 7·64-inch, sixteen 6·49-inch, two 1·85-inch, and two 1·45-inch guns; also five torpedo-tubes, three above water and two submerged; complement, 38 officers and 690 men; cost £1,150,000. The ten torpedo-boat destroyers will each have a length of 183¾ feet, beam, 19¼ feet; draught, nearly 10 feet; displacement, 303 tons; engines, 4,800-H.P.; speed, 26 knots; bunker capacity, 37½ tons; radius of action, 2,300 miles at 10 knots, and 217 miles at 26 knots. Each will carry one 2·56-inch guns, and two torpedo-tubes above water. The complement will be 4 officers and 44 men; and the cost £67,460 each boat. The type of the torpedo-boats is not yet settled, but they will probably have a length of 121 feet; displacement, 90 tons; engines and boilers, Normand or Dutemple Guyot; radius of action with ten tons of coal, 1,800 miles at 10 knots; armament—two guns of a new type of about 1-inch calibre, and two torpedo-tubes. The type of the submarines is not yet definitely settled, but they will probably be on the lines of the "Sirène" and "Triton," building at Cherbourg. The two battle-ships and the cruiser are expected to be ready for delivery in 1905, and most of the smaller vessels in 1903. The ships have been named as follows:—The battle-ships "République" and "Patrie"; the armoured cruisers "Léon Gambetta," "Jules Ferry," and "Victor Hugo"; the destroyers "Carabine," "Sarbacane," "Francisque," "Salve," "Arquebuse," "Arbalète," "Mousquet," "Javeline," "Sagaïe," "Epieu," "Harpon," "Fronde" "Dard," "Baliste," "Mousqueton," "Arc," "Pistolet," "Bélier," "Catapulte," and "Bombarde" (the eight last named having yet to be put in hand in private yards); the first-class torpedo-boat 277 at Saigon, and numbers 256 to 276 (21) in French yards. The following names have been given to the new submarine boats:—"Silure" and "Espadon" (these belonging to the previous programme). "Naïade," "Protée," "Perle," "Esturgeon," "Bonite," "Thon," "Souffleur," "Dorade," "Lynx," "Ludion" "Loutre," "Castor," "Phoque," "Otarie," "Méduse," "Oursin," "Grondin," "Anguille," "Alose," and "Truite," being 20 of the new list.

The Naval Estimates for 1902.—The proposals for the Naval Estimates for 1902 have been distributed, the credits asked for amounting to 312,097,950 francs (£12,483,918). This shows an apparent decrease of 15,500,000 francs (£620,000) on the last Estimates, but if account is taken of the recent transfer of the Marine forces to the War Department, which cost the Navy 27,000,000 francs (£1,080,000), it will be seen that the naval services in 1902 cost 11,000,000 francs (£440,000) more than in 1901.

Over 6,000,000 francs (£240,000) of this increase is for naval construction, and much of the remaining increase is due to the greater number of efficient ships in

commission. The division of coast-defence vessels is to be abolished, and reserve divisions composed of three battle-ships and one cruiser each are to be added to the Mediterranean and Northern Fleets.

A rear-admiral is to be in command of the Pacific Division, at present commanded by a port-captain; and a vice-admiral is to be maintained in command in China, notwithstanding the favourable turn in affairs on that station. The numbers of men proposed also show an increase from 48,137 to 50,107 men—an increase of 1,714 men.

Two new battle-ships, seven new armoured cruisers, and one first-class cruiser are to carry out their trials in 1902.

121,777,885 francs (£4,871,115) are for naval *matériel*, of which 90,330,203 francs (£3,613,208) are for new constructions. Up to the present 69 vessels under the new programme have been commenced, namely, 2 battle-ships, 3 armoured cruisers, 20 destroyers, 21 torpedo-boats, and 23 submarine boats; there remain to be laid down, 4 battle-ships and 2 armoured cruisers. This will be done next year, and they are to be completed by 1906.

As regards submarine boats, before the 1900 programme there were 12 of these vessels, 4 completed, namely the "Gymnote," "Gustave Zédé," "Morse" and "Narval," and 8 under construction, namely the "Français," "Algérien," "Farfadet," "Gnome," "Korigan," "Lutin," "Sirène" and "Triton." Two more, namely the "Silure" and "Espadon" were laid down last year, so that by the end of this year (1901) there will be 14 of these vessels completed and ready for sea.

The current year 1901 will also see a great increase in the construction of submarine boats, 20 have been laid down and 3 others will be shortly commenced. The 20 are all of the same type, they have a displacement of 68 tons; length, 23·50 metres (76 feet 11 inches); beam, 2·26 metres (7 feet 4 inches); depth, 2·41 metres (7 feet 10 inches), and are propelled by electricity supplied by accumulators; they will have a speed of 8 knots, and a crew of 1 officer and 4 men each; their cost will be much less than their predecessors, being 365,400 francs (£14,616) each. The 3 others to be commenced this year are of three different types, but no dimensions or description of them are given in the budget. The first will be built at Cherbourg at a cost of 489,300 francs (£19,572), the plans being by M. Romazotte who constructed the "Gustave Zédé" and "Morse." The second to be built at Rochefort will cost 799,300 francs (£31,972), the plans being by M. Mangas, who built the "Farfadet." The plans of the third and most important are by M. Bertin, director of naval construction; she is to be built at Toulon at a cost of 924,300 francs (£36,972).

No submarine boats will be laid down in 1902, but in 1903 five will be commenced at Toulon, and in 1904 twenty-six will be commenced, namely, eight at Rochefort, ten at Cherbourg, and eight at Toulon, all of which will be finished at the end of 1906, so that by that date France will possess a total of 68 submarine torpedo-vessels.

At present three central submarine-boat stations have been established at Cherbourg, Rochefort, and Toulon, the ports where they are being built; others will be organised as the number of boats ready for sea increases. This year 19 officers and 141 men are allotted for this service, at a cost of 293,874 francs (£11,595), to be increased in 1902 to 27 officers and 306 men, at a cost of 850,000 francs (£34,800).—*Le Yacht* and *Le Temps*.

UNITED STATES.—*Bureau of Construction and Repair.*—The report of the Chief of the Bureau of Construction and Repair for the fiscal year 1899-1900, which has been made public, is no exception to the rule which that Bureau has established in recent years, of making its report complete, explicit, and, therefore, of great public value. Especial interest attaches to the current report, as it is the last one submitted by Rear-Admiral Hichborn, the present Chief Constructor, who, under the operation of law, retired on the 4th March, 1901. The period during which he has held this important post has seen greater changes in the Navy than any other equal period in its history, as is shown by a summary given in the report, in which Admiral Hichborn says:—

"How many of those associated with the work of this period, looking into the future, would have believed that during the space represented by the active career of one man, wooden ships of war and sails as a means of propulsion would have passed; that steel should have become the material of construction; steam the one propelling power, and electricity a general agent on shipboard; that the demands for protection, armament, speed, and endurance would have forced the construction of battle-ships and armoured cruisers of deep displacements of over 16,000 and 15,000 tons and speed of 18 and 22 knots? Who of them would have believed that within that time the resources of this country could have been so developed that when such vessels of war are to be constructed every part going into them is American production?"

The report opens, as is customary, with the Estimates. The principal items are:—Salaries, 16,180 dollars; preservation of and repairs to vessels of the Navy, 7,000,000 dollars; repairs and improvements to Navy yard plants, 920,000 dollars; civil establishments at the Navy yards and stations, 25,824 dollars; hulls and outfits of vessels and steam machinery heretofore authorised, 21,772,917 dollars.

The Chief Constructor points out the disadvantages under which the naval station at Cavite labours, and quotes a report from the Naval Constructor relative to a proposed site at Olongapo, Subig Bay. He withholds recommendation thereon until the question of a permanent naval station in the Philippines is definitely settled.

Especial attention is placed upon the need for additional dry docks. "We have 9, Great Britain 52, and France 32. It is to be expected that, notwithstanding the increase in docking facilities at present contemplated, the additions to the Navy from year to year, during the completion of these docks, will leave us in the same unsatisfactory condition in this most important matter. There is urgent need for proper facilities for removing from the water and storing torpedo-vessels at each of the principal yards. This need will become more acutely felt as the vessels of this class now building are completed, as the greater number of them will be in the near future."

On the subject of building vessels in Navy Yards the report says:—"There are at the present time, in view of the prosperous condition of the shipbuilding industry and the number of naval vessels building and appropriated for, sufficient work to permit the assignment of a portion of the building work to the Government yards, without there being a question of the withdrawal or withholding of necessary support and assistance, the maintenance of which in a high state of efficiency is unquestionably of national importance."

After pointing out that "the unanimous testimony of experience has been, and is, that the execution of a certain amount of building work in the chief Government yards is necessary to the maintenance of such Navy yard staffs as a complete and efficient naval organisation requires," and that England is building in her Navy yards 16 battleships and cruisers; France, 17; Germany, 8; Russia, 6; and Italy, 3 also in their Government yards, he says:—"It is believed that we have reached that stage in naval development, still considerably behind our national development, which forces upon us serious consideration of this step which other naval Powers have found necessary and expedient."

The Bureau strongly recommends the building of a modern sailing ship of 1,500 to 1,800 tons for training purposes at the Portsmouth N. H. yard, where there is on hand timber of little use for other purposes nearly sufficient to complete it.

The vessels designed by the Bureau of Construction and Repair under the new construction authorised by the last two Congresses, are treated of inconsiderable detail, and the battle-ships, armoured cruisers, and so-called protected cruisers generally described. In connection with this matter the admiral, commenting upon the batteries of battleships, says:—

"The decision finally come to in the arrangement of the batteries of the new battleships was a compromise between opinions. The merits and demerits of the superposed turret have been under discussion for some years. The completion of the first battleships to which the system has been applied, and the trials to which they have been subjected, have demonstrated only the mechanical practicability of the system of mounting.

It has been recognised from the commencement of the discussion that there are grave disadvantages in this system of mounting. There is nothing in the experience with the 2 vessels recently completed tending either to show how they may be removed or to determine the extent of their effect upon the vessels in which this system is employed. The decision in the case of the recent vessels has been reached in practically the same way as the decision relative to the first vessels to which the system was applied, and is based upon the same presentation of arguments, *pro* and *con.*, although the Navy now possesses the means of determining practically, at any rate, a portion of the points at issue."

As might be expected of an officer so intimately identified with what has been done in this country toward getting sheathed ships for the Navy, Admiral Hichborn's report deals at some length with the question of sheathing, and a technical explanation of the principal features involved is followed by these remarks :—"It is a practical impossibility to prevent such fouling that in a short time after docking the speed is sensibly reduced, and after the lapse of a very few months her speed capabilities cut down 25 per cent. to nearly 50 per cent., except by providing her with a wood-sheathed and coppered bottom. The process is an old one. Its practicability and freedom from injurious effect upon the ship to which it is applied, even the element of safety which it adds, have been fully demonstrated.

"Much of the prejudice against it is born of incomplete information as to what is really involved, and is of the same nature as that which opposed the introduction of steam navigation and steel ships."

In speaking of the steel for naval vessels it is pointed out that nearly 50,000,000 lbs. of steel material have been inspected, passed, and shipped during the year by the inspectors under the Bureau of Construction and Repair, representing an increase of more than 100 per cent. in 2 years in the quantity of this material required. The vastness of the figures gives some idea of the extent and importance of the operations carried on under the Bureau.

Speaking of submarine boats the report states :—"The past year has brought to fruition the experimental work covering a considerable period, and has demonstrated the practicability of the submarine boat. Of the possibilities in the application of efficient submarine vessels to coast-defence work it is not necessary to speak, nor is it necessary to do more than mention the economy in men and money in this form of defensive preparation and the moral effect upon an enemy which will come from a knowledge that we possess and are employing for coast and harbour-defence vessels of so great possibilities. Experience has shown that the appearance of any particular type of fighting craft in sufficient numbers to make its possibilities a factor to be considered, forces modifications in types previously existing. That this should be particularly the case with submarine vessels there is every reason to believe, and there can be little doubt that to the first nations in the field with the new type will accrue not only the advantages which will come from the possession of efficient vessels of this type, but the additional advantage and saving in cost which will result from an early understanding of the new type and the modifications which its introduction will force in existing types."

Embodied in the report there are tables showing the vessels completed during the past fiscal year, as well as those dropped from the Navy List, and a separate table gives for all the vessels under construction the percentage of completion on July 1st, 1900, and their probable date of completion.

Copious extracts from the reports of the naval constructors at the several Navy yards, and from the reports of the superintending constructors, give detailed information as to the execution of the mechanical work under the Bureau. At the end of the report there are very complete and elaborate tables giving information of great value relative to vessels built and building.

Of the experimental model basin we are told that its value will increase greatly as time goes on through the accumulation of *data*, but the experience already had with it in connection with the determination of the lines for the 5 new battle-ships now being

designed demonstrates conclusively that even now it is practically indispensable for the work of the Bureau. As a result, however, of comparatively few experiments in the basin the dimensions and shape finally adopted for the hull were such an improvement that the completed vessels will develop the required speed (19 knots) with 2,000-H.P. less than would have been required with the first set of lines.

It is recommended that the number of apprentices at the Navy yards be increased and provision made for the transfer of those who show themselves worthy to responsible positions with permanent employment at the stations where their services are especially needed. An increase of the clerical force is also called for. The Bureau urgently recommends the removal of the present legal restriction as to the number of officers in the corps of naval constructors, and its gradual increase by the appointment of assistant naval constructors, under the conditions which have been followed in the past, to such proportions as will enable the Bureau to carry on its work efficiently and provide for the detail of officers to duty in the many places where the services of a naval constructor are required and have been requested.—*Army and Navy Journal.*

MILITARY NOTES.

PRINCIPAL APPOINTMENTS AND PROMOTIONS DURING JUNE, 1901.

Lieut.-Colonel D. F. R. Dawson, C.M.G., Military Attaché, Paris, to be Colonel. Brevet Colonel J. S. Collins, from Lieut.-Colonel the Queen's (Royal West Surrey Regiment), to command a Second-Class District in India with the temporary rank of Brigadier-General whilst so employed, and to have the substantive rank of Colonel in the Army. Captain and Brevet Lieut.-Colonel T. L. N. Morland, the King's Royal Rifle Corps, is granted the temporary rank of Colonel whilst acting as Commandant of the West African Frontier Force in Northern Nigeria. Colonel C. G., Earl of Erroll, C.B., to be an A.A.G. (temporary). Lieut.-Colonel and Brevet Colonel C. E. Bradley, the Prince of Wales's (North Staffordshire Regiment), to be a Colonel on the Staff in South Africa. Lieut.-Colonel W. S. Walford, R.G.A., to be Colonel. Lieut.-Colonel W. F. Graham, R.G.A., to be Colonel. Colonel Sir H. A. MacDonald, K.C.B., D.S.O., A.D.C., to command a Second-Class District in India and to have the temporary rank of Brigadier-General whilst so employed. Lieut.-Colonel and Brevet Colonel J. Spens, C.B., A.D.C., the King's (Shropshire Light Infantry), to be a Brigadier-General on the Staff, to command a Mobile Column, and to have the local rank of Brigadier-General whilst so employed. The under-mentioned officers are granted the local rank of Colonel in South Africa whilst commanding columns :—Major and Brevet Lieut.-Colonel E. H. H. Allenby, 6th Dragoons; Major and Brevet Lieut.-Colonel Sir H. S. Rawlinson, Bart., C.B., Coldstream Guards; Lieut.-Colonel M. F. Rimington, C.B., 6th Dragoons; Major and Brevet Lieut.-Colonel G. E. Benson, R.A.; Major and Brevet Lieut.-Colonel A. W. Thorneycroft, C.B., the Royal Scots Fusiliers. Lieut.-Colonel W. Babtie, M.B., V.C., C.M.G., R.A.M.C., to be Assistant Director (temporary) Army Medical Service. Lieut.-Colonel R. M. Ruck, R.E., to be Colonel.

INDIA.—The following are given in a G.O.C.C. regarding the provision of 102,800 rupees in the Military Budget Estimates of 1901-02 to meet the cost of the following items connected with the Volunteer Force in India :—

a. Proficiency allowance to officers 1,500 rupees. This amount has been provided to admit of the proficiency allowance referred to in para. 498 Army Regulations, India, Vol. IX., being increased in the case of subalterns to 35 rupees and in the case of captains and field officers to 50 rupees.

b. Allowance for officers who pass the prescribed examination in tactics or artillery subjects, as the case may be, at 250 rupees ... 2,000 rupees.
This allowance of 250 rupees is intended as an *honorarium* to the funds of the corps for each officer passing the prescribed examination referred to in lieu of the extra capitation grant of 5 rupees per annum at present allowed under para. 503 Army Regulations, India, Vol. IX.

c. Increased allowance of free ammunition 60,000 rupees. This amount has been provided to admit of the annual allowance of free small-arm ammunition being increased from 100 to 150 rounds per officer and trained Volunteer (para. 292 Army Regulations, India, Vol. IX.) Officers may draw 150 rounds of revolver ammunition in lieu of the above.

d. Help to be given for the construction of ranges, 5,000 rupees (in addition to amount already allowed).

e. Band allowance to corps between 250 and 300 strong at 100 rupees per annum ... ... 6,000 rupees.

The minimum strength of a corps laid down in para. 45 Army Regulations, India, Vol. IX., entitling it to the band allowance will, in future, be 250 instead of 300.

f. Prizes for rifle shooting to non-railway corps, 25,000 rupees.

This allowance to be granted on the same conditions as those prescribed for railway corps in para. 444 Army Regulations, India, Vol. IX.

g. Special allowance of 25 rupees per mensem to sergeant-instructors in Assam. 3,000 rupees.

This allowance is given to cover the extra cost of living in Assam.

—*The Pioneer Mail.*

SOUTH AFRICA.—The United States War Department has made public two interesting reports on the war in South Africa, one by Captain S. L'H. Slocum, of the 8th Cavalry, Military Attaché with the British Army, and the other by Captain Carl Reichmann, 17th Infantry, our Military Attaché with the Boers.

Captain Slocum, with the military attachés from France, Russia, Germany, Austria, Italy, and Japan, arrived at Cape Town on 28th and 30th November, 1899, and on 10th December joined General Buller at Frere Station, six miles from the battle-field of Colenso. A description is given of the battle of Colenso to illustrate the tendency of the English to make frontal attacks only. Their wagon transport is described as entirely inadequate, so that but for the railroads the British forces would be almost immobile. Knowing this, the Boers picked out their positions on the railroad, fortified, and waited for the attack. At Colenso General Hart's brigade advanced into the open plain in a column of companies closed in mass, six paces interval between companies, and thirty-two companies, and it was only after a shell from the 6-inch Creusot from Grobler's Kloof had dropped among them that they deployed. Forty men were drowned in an attempt to ford Bridle Drift. Under the murderous rifle and artillery fire to which the brigade was subjected, one company of the Dublin Fusiliers lost all of its officers and 64 out of 100 men before it retired. The fire from the Hotchkiss and Maxim guns was particularly severe. The guns of the artillery brigade covering the crossing of the river were unlimbered under heavy fire, dropping men and horses, and the guns were abandoned after nearly all the men and horses had been killed and the ammunition exhausted. The whole English Army finally recoiled from the Boer entrenchments, and the battle was over by noon. The total English forces engaged were 16,000—1,000 mounted infantry, 36 field artillery guns, 6 naval guns and 250 men, Naval, Brigade. The total losses in the action were :—Officers, 5 killed, 36 wounded, and 21 missing ; men, 160 killed, 634 wounded, and 311 missing. A striking feature of the battle was the total invisability of the enemy, not a Boer being seen.

Captain Slocum says :—"The Boer forces are all mounted on small, hardy ponies, which are trained to stand where they are left ; they are superb rifle shots, have, undoubtedly, expert foreign artillerymen behind their guns, and, finally, they are operating along interior lines."

A second report, dated at the U.S. Legation, Bloemfontein, 2nd March, 1900, describes in detail Lord Roberts' movement toward Kimberley. Lord Roberts successfully advanced on Kimberley, and beyond, when he was reduced to three days' rations in a country affording no food whatever, with a warlike enemy in unknown force on his only line of communication. In this report the following comments are made :—"The Boer trenches were from 5 to 5¼ feet deep and about 2½ feet wide at the top, broadening out as they reached the bottom to about 4 feet. Small chambers were hollowed in the sides at the bottom, in which they seemed to have lived while occupying the trenches, as they were filled with pots, kettles, etc. The trenches were for a short distance continuous, usually about 20 yards, then would come at short intervals separate holes to contain two or three men ; they were not covered in any way. Their trail resembled a writhing snake, which lessened the danger from enfilade fire. It would be easy enough to get men into such a trench, but a thundering big job if you

wanted to get them out again, to make a counter-attack. They destroyed the power of offensive or aggressive action, and the lack of continuity, caused by the separated and distinct holes, made communication extremely uncertain and hazardous. Their only merit was, to me, their irregularity; in all other respects they simply demonstrated how a trench should not be made, for from the moment they completed and got comfortably into them, the Boers' chance, or even thought, of counter-attack or initiative was gone.

"The Boers are splendid on the defensive, but do not seem to consider offensive movements as part of their proper tactics. For example, the long line of communication of the British Army, which finally reached from Bloemfontein to the railroad at Kimberley, a little over 100 miles, was only twice disturbed—once at Waterval Drift, and once when a small convoy of 20 wagons was captured between Jacobsdal and Klip Drift. Had they been bolder and more aggressive, with their mobility, they could have caused the British endless anxiety and annoyance on their advance to Bloemfontein. Lord Roberts correctly appreciated this weakness on the part of the enemy and successfully advanced, simply turning every position he found defended, and proceeded on his march, letting his rear practically take care of itself, knowing it would not be molested. The leaving of the convoy, which was the main supply park of the Army at Waterval Drift, with an escort of only 200 mounted infantry, betrays the weakness of organisation, and even ordinary precautions, which might under other conditions prove fatal to the British.

"If ever a people or nation exemplified the phrase, 'Brave to a fault,' it is the British. If they were less brave, there would have been many less faults and more victories in this war. Lord Roberts is a shining and glaring exception to this rule. All in all, I consider him to be a remarkable man and general. The English artillery had such a tremendous preponderance over the Boers, who, in fact, rarely ever used theirs, that it is impossible to make a fair comparison on their respective efficiency. The Boer smaller Creusot and Krupp guns are, I believe, rapid-firing ones; the English guns are not. The field and horse artillery use shrapnel only, with an extreme effective of over 3,000 yards, but they have no common shell, the wisdom of which I must leave to some one better qualified than I to comment upon.

"The lyddite shell has proven one of the distinct disappointments of the war. It has no effect whatever against entrenchments. On exploding, which it almost always does, as far as I could judge, it only makes a small hole about a foot deep and 2 feet in circumference and breaks into few fragments. Against the armour of a battle-ship for which they are designed mainly, I have no doubt that they would be very effective and the poisonous gases confined in a narrow and close space would be destructive, but in the open air they are too quickly dissipated to do any injury. The Vickers-Nordenfeldt automatic gun, used by the Boers, has a strangely demoralising effect upon an enemy. It is an effective little weapon, and the British soldier dreads it more than any other gun the Boers have. Its pom, pom, pom in rapid succession and unknown number is a great strain on the nerves. It is very accurate.

"The use of smokeless powder by both belligerents has necessitated, I believe, a greater change in modern battle tactics than even the increased range of the small arm; one can locate the artillery by the flash, but infantry beyond 500 yards can only be heard and felt—not seen. This fact increases the difficulty of the attack far more than the defence, the latter being stationary and carefully hidden, while the former is of necessity continually in motion. The fact that the artillery of its own army can seldom support it so efficiently as formerly, further increases the difficulties of the attacking infantry. The artillery, in fact, labours under precisely the same disadvantages as the infantry, but to, perhaps, a greater extent on account of the greater distance at which it is engaged, while it is, in addition, often impossible to tell how close the attack is to the defender's line. To locate the enemy, balloons and powerful telescopes must be used, while to ensure the harmonious working of the different arms, extensive use of signalling must be made from all parts of the field, even, if possible, from the firing line itself. The balloon with the British Army has been of inestimable

value to it. It usually ascended about 2,500 yards from the enemy's line, and secured valuable information, especially for the artillery. What it is made of I do not know, and cannot find out, but its practical workings have been a great success. The Boers fired on it constantly, but never injured it sufficiently to compel its descent. It was attached to a wagon drawn by oxen."

Captain Slocum in his third report remarks upon the lack of reconnaissance or patrolling by the British Army. This report is largely made up of general orders received by the British Army.

The fourth report of Captain Slocum, under date of 7th June, 1900, describes the operations of the British Army from Bloemfontein to Pretoria. As customary, he gives a day by day account of the movements of the British Army. The march northward from Bloemfontein was admirably planned and conducted. The area over which the British forces were compelled to operate was enormous, and almost devoid of supplies of any kind. The infantry, he says, always did well, but the reluctance of the soldier to entrench himself and the indifference of the officers to enforce this most necessary and vital precaution was strikingly shown on all occasions. They would pile a little parapet of stones, visible for a long distance, and, consequently, a target for the enemy's guns, and a source of death in itself when struck by a shell, but they would rarely ever dig a trench.

"I never could understand this serious fault. The infantry never make rushes in their attacks, but march erect and calmly forward. I have seen mounted men under a hot rifle-fire at short range halted, waiting for orders to advance, sitting erect on their horses, a perfect target, while lying over on their horses' necks they would have had some protection, as I had. They have not the individuality and resources of our men, but for indomitable courage, uncomplaining fortitude, and implicit obedience, they are beyond criticism. The artillery has shown itself during the war, in my opinion, to be the best branch of the combatant service. The field and horse artillery guns were not of the most modern type, and were very often outranged by the enemy's; nevertheless, the gunners, both officers and men, have demonstrated that they are as good as the most critical commander could desire. The naval guns, worked by sailors, have been one of the most important factors of the war."

Captain Slocum says that in his opinion our cavalry, as drilled and instructed, are the best in the world to successfully meet the new conditions of war. That dismounted fire action for cavalry is a necessary component of its success he does not think there is a doubt, and expresses the opinion that our cavalry is the only one in the world thoroughly drilled and instructed in it.

"In my opinion, the bullet is too merciful which permits of a large percentage of those wounded by it to return to the front within a few weeks, as the Mauser ·26 and Lee-Metford ·303 did in this war. A careful study of the war in South Africa by European Powers, showing as it does, the great possibilities of the defensive use of smokeless powder, magazines, rifles, and increased artillery range, will do more to preserve the peace of Europe than a hundred Hague Conventions. The clip system of the Mauser rifle is, I think, an excellent one. Not only are the cartridges loaded into the magazines much more quickly than without it, but the clip holds the cartridges in the belt and prevents their being lost. The belt worn by the Boers generally had twelve pockets, with a flap coming down over it and fastened to a stud. The bottom of the pocket or pouch was perforated with five holes. The clip, with the five cartridges in it was put horizontally into the pouch, the ends of the cartridges protruding through the holes at bottom and the flap flattened down; the cartridges were then secure and could also be quickly withdrawn from the pouch. To allow any part of the equipment or uniform of man or horse to catch the eye of a man behind a rifle which carries over 2,500 yards, and who cannot himself be seen, is to court misfortune. If it were a possibility, and I believe it is, I would advocate a uniform coloured one side khâki and the other green, made to be reversible. I do not believe the soldier going under fire will mind the seams showing. If the manufactures say this is impossible, I would suggest the abolition of some of the full dress uniform and

the money saved thereby devoted to providing the soldier with two suits, khâki and green. Modern war is business of the most serious and scientific kind, and every part of the equipment which delights the eye must disappear from it."

The remainder of this report is entirely given to remarks on the various details of equipment, etc., necessary in modern war. We will simply give a sentence here and there as showing Captain Slocum's views :—"Each staff officer, no matter of what kind, wore a distinctive badge on his collar, a stripe of red cloth. Consequently, when orders were given by them it was known at once that they were duly authorised from some authoritative source. The difficulties of mounted men in reconnoitring are largely increased under modern conditions. I have often seen what proved to be afterwards a mere handful of men compel a division to halt, deploy, and advance as though against a large force. Field glasses of the very best description should be in the hands of every officer and sergeant of the combatant portion of the Army. The sword should be abolished. As an infantry officer should now carry a rifle, to prevent his being distinguished at a distance from the men and made a special target of, in addition to his pistol and field glasses, a sword is certainly superfluous.

"In the open country over which the British generally fought in the Orange Free State and Transvaal, they used successively deployed lines, and all were more or less under fire at times. The real line acted as the supporting one, and was pushed in as close as possible, without suffering severe loss, being directed to the point where reinforcements were most needed. The Mauser automatic pistol, which can be used either from the hand or shoulder, carried by some of the officers, is a most excellent weapon, and, with a larger bullet, is better than any form of revolver that I have seen. In my opinion, formed from observations in South Africa, as many men as possible, should be transported in war, either on horseback or by automobiles. Slow moving infantry against a mobile force with an equally good gun is practically at its mercy.

"A portable military railway, such as the Germans have, seems to be almost indispensable in war. Telescopic sights on some of the rifles in each company would be a great advantage. The effect of artillery fire against intrenchments is really more of a moral than physical nature. High-angle fire, such as the Hotchkiss, seems to be the only way to reach men so protected. In the siege at Mafeking, General Baden-Powell told me that he adopted the following scheme to prevent the flash of his guns being seen by the enemy : He fixed blankets in front of his guns and fired through them. As he stated, 'It played blazes with the blankets, but they never could find the guns.' The real value of armoured trains is problematical ; the British used them with varying success, there being less variety in the failures than in the successes. It is so easy to derail a train, and almost as easy to smash it with artillery, that, against a clever enemy, an armoured train appears to me a useless expense and waste of material."

The report of Captain Carl Reichmann is exceedingly long and goes into the greatest detail. Captain Reichmann highly praises the Boer character, his fighting qualities, and his bravery, but severely criticises his absence of soldierly qualities. In his opinion the foreigners were the aggressive feature of the Boer Army, and he explains the victories of the British in the following sentence :—"Politics play a great rôle in the selection of officers, and the families prominent in a political way furnished a number of officers corresponding to their political importance. To the military mind the degree to which inferior officers carried their self-will is inconceivable."

"Referring to the Boers themselves, he continues :—"Although still fine shots, the Boers are no longer the excellent marksmen they used to be. Among troops where no discipline was enforced, it is natural that the expenditure and waste of ammunition were great ; the burghers travelling on a train would shoot out of the windows at the ant-heaps in the prairie.

"Our official guide, a grandson of President Kruger, tried to stop the shooting, but came back disheartened. There was no importation of munitions of war after hostilities had broken out, and the Government eventually went to work to establish ammunition factories. Volunteers, generally, have played a considerable part in this war ; they were mostly foreigners, adventurers, amateurs, active, retired, and ex-officers of foreign

armies. The Boers are hunters, rather than soldiers, they are not much given to holding a position to the last. The foreigners, on the contrary, once posted would hold their ground. Whenever offensive operations were undertaken the foreigners had to bear the brunt of the fighting.

"A careful investigation of the strength of these foreign corps shows that their number did not exceed 600 or 800. The Hollander Corps numbered 320 men. The Italian Corps numbered about 75 men, representing eleven different nationalities, under command of Captain Ricardi, who had been with Aguinaldo in the Philippines. The Scandinavian Corps numbered 40 men. The Irish Brigade was commanded by Colonel Blake, formerly an officer of the 6th U. S. Cavalry, and numbered about 150 men. The German Corps numbered 200 men, and there were also a French Corps of 25 men, a Russian Corps of 25 men, and an American scout company of about 50 men. Another was that of the Irish-Americans, who had reached Pretoria., under the guise of ambulance *personnel*, they being members of the ambulance corps organised at Chicago."

He tells of the life of the Boer in camp, saying :—"During my stay of seven months with them I never saw a drunken Boer, and the greatest piece of profanity I ever heard was the Dutch equivalent for 'Almighty.' In camp or at a halt, on the march, he read his Bible or hymn book, and at night, after dark, groups of men would sing psalms and hymns. The men who led the Boers in prayer also led them in battle. Their religious sentiment predominated in everything, and their individual trend of sentiment was such that they were as much appalled by the slaughter of the enemy as they were aggrieved by their own defects."

Referring to charges that the Boers violated the rules of war, Captain Reichmann says :—"Such alleged unlawful occurrences were not confined to the side of the Boers ; they occurred on the British side also. The Boer bestowed the same care on the British wounded as on his own, and treated British prisoners with kindness and consideration. His most serious defect was the lack of military discipline. When a proposed movement did not suit him or his officer, he simply did not move, and many a well-planned affair was ruined in that way. Under fire the Boers were remarkably cool and deliberate. Once started on the attack, the British infantry had no cover against the Boer artillery, but as a rule the Boer's lack of offensive capacity prevented him from reaping the fruits of tactical victory. He was contented when he had repulsed the enemy.

"The Boers were always fairly well informed of the enemy's whereabouts and doings. In transmission of intelligence the bicycle played a prominent part. The cyclists did not confine themselves to the roads, on which they had the right of way ; they made short cuts by following cat paths and even rode across the prairie. They could be found at every general's headquarters. The heliograph also found executive employment."

In concluding the report, Captain Reichmann says :—"In point of tactics, while some features were brought out in strong relief, the war established no new principles. While the fine defensive positions taken up by the Boers, and their superior marksmanship, compensated to some extent for their numerical inferiority, the superior quality of their field pieces could in no way make up for their paucity. The prolific source of Boer defeats was their lack a sufficient number of guns."

Captain Reichmann criticises the British organisation by saying :—"The British cavalry was neither sufficient in number nor trained in full appreciation of its modern rôle, and mounted infantry had to be resorted to as a stop gap. Nor will the British mounted troops be a match for the Boers until they can ride, not like mounted infantry, but like cavalry ; and until they can fight, not like cavalry, but like infantry.

"The only cavalry lesson we draw for ourselves from this war is that we cannot have enough of our kind of cavalry. One feature of this war is the superior effective range of the Krupp and Creusot guns of the Boers over the Armstrong gun of the British. The lyddite shell can hardly be said to be a success in field operations."

Captain Reichmann says officers told him that the British artillery killed many of their own troops by keeping up too long the fire to cover the infantry attack, the shells falling among the advancing soldiers.—*U.S. Army and Navy Journal.*

GERMANY.—According to the census of the 1st December, 1900, says the *Militär-Zeitung* of Berlin, the German Empire possesses 4,180,001 horses, which are distributed as follows :—

Prussia	2,913,003
Bavaria	384,869
Saxony	166,713
Wurtemberg	112,129
Baden	75,395
Hesse	59,091
Mecklenburg-Schwerin	101,818
Saxe-Weimar	22,207
Mecklenburg-Strelitz	18,560
Oldenburg	41,849
Brunswick	33,281
Saxe-Meiningen	7,780
Saxe-Altenburg	12,282
Saxe-Coburg-Gotha	10,301
Anhalt	19,509
Schwarzburg-Sondershausen	4,948
Schwarzburg-Rudolstadt	3,505
Waldeck	6,719
Reuss (elder branch)	1,953
Reuss (younger branch)	4,579
Schaumburg-Lippe	4,088
Lippe	9,477
Lubeck	4,003
Bremen	6,521
Hamburg	16,732
Alsace-Lorraine	138,689

It must be noted that the numbers given for Mecklenburg-Strelitz and for Alsace-Lorraine are those for the 1st December, 1897, the more recent numbers not being forthcoming.

NETHERLANDS.—The Second Chamber of the States-General has recently voted two new schemes, one with regard to military obligations, and the other to the organisation of the Landwehr, brought in by the Government as a continuation to the law of the 2nd July, 1898, introducing personal service. A third scheme, bearing on the composition of the military forces, was withdrawn in the course of the discussion, and will not be again presented until the effectives of the first two schemes have been decided upon. Some rather important changes were introduced during the debates, and their text has been finally adopted in the following form :—

THE ANNUAL CONTINGENT

has been fixed at 17,500 men, instead of 11,000, of whom 12,300 will be subject to a normal period of primary instruction, and 5,200 to a reduced period of 4 months. A portion of the contingent of 12,300, which cannot, according to an old law, exceed 600 men, is drafted annually into the Navy.

In each commune the Militiamen are selected by lot, commencing from the lowest number. The young men who, according to their numbers, are allotted to the contingent, and who fulfil the educational and physical conditions, which are fixed by Royal decree, are attached to the service for 4 months. Should their number not correspond to that of the 4 months' contingent fixed for the commune, priority for admission to the contingent is given to those who have drawn the highest numbers. Those young men who satisfy the military educational and physical conditions are drafted into the corps and quartered in the garrison they may select, so far as the physical aptness required by these corps and the interests of the Service will permit.

Recruiting.

The exception under which only sons benefited is done away with, and in families where the sons are of unequal numbers it is the smaller instead of the larger half that is exempted. The extreme period of adjournment is increased from two to three years. Dispensation from service as supporter of the family, each instance of which must be the object of a Royal order, may be extended to Militiamen whose help is indispensable to persons whom they are bound to support. In the event of exemption not being accorded, the family or the indigent persons receive a monthly indemnity, the amount of which is fixed by a Royal order. No further changes have been brought in with regard to other cases for exemption.

The Duration of Military Obligation

is fixed at 15 years, of which eight are passed in the Army and seven in the Landwehr. Those exempted from service, as well as Militiamen belonging to the mounted branches, and men of torpedo corps, are not obliged to serve in the Landwehr.

Hitherto, Militiamen, after having completed a term of seven years in the Militia, share with all young men of 25 years of age, the liability for a fresh drawing of lots to decide whether or not they should be enrolled in the Schutterij, the effective of which is 2 per cent. of the population. The period of service in the Schutterij was 10 years, five of which were passed in the Schutterij and five in the Reserve.

Duration of Service. 1.—Period of Primary Instruction.

Dismounted Troops.—The period of primary instruction is fixed at a maximum of 8½ months. This period may, however, be increased to 12 months for Militiamen, who on the expiration of the term of 8½ months do not fulfil the conditions of theoretical and practical knowledge laid down by Royal order. Militiamen are enrolled during the month of March, and their service dates from the 15th of that month. The first scheme fixed the legal duration of the period of primary instruction at 12 months, but as a matter of fact this period was reduced to 8 months. Militiamen for 4 months' service, instead of being called out for service in the winter months as was laid down in the first scheme, are now called out about the 1st June and kept with the colours till the 30th September, that is to say until after the grand manœuvres.

Mounted Troops.—Militiamen are bound to serve for a period of primary instruction of 18 months. They are called out in two lots, with an interval of 6 months, the first half at about the 1st March, the other half at about the 1st September.

2.—Service in the Primary Portion.

When, on the departure on leave of the class, the number of Militiamen kept back to complete a term of 2 or 5 years' active service[1] and completed up to strength by men remaining or re-engaging for service with the colours, is insufficient for service purposes and for the instruction of cadres, the Militiamen of the last levy may, to the number of 7,500 men, be retained with the colours for 4 months in dismounted and for 6 months in mounted corps. They are chosen by lot, and substitution is permitted between men belonging to the same corps. It results, therefore, that service in the remaining portion is divided into two lots, each consisting of a minimum of 5,620 men. Militiamen of the first lot will remain with the colours for 4 months after the liberation of the class; those of the second lot will be recalled for 4 months' service after the departure of the first lot.

In the mounted corps 1,220 men—a number corresponding to that of the annual contingent for that branch—will be kept for six months. The remaining portion, present with the colours, will consist then of 5,620 men belonging to the unmounted and 1,220 men of the mounted branches of the Service, altogether of 6,840 men. The remaining 660 (7,500 – 6,840=660) not made use of will form a reserve at the disposal of the Minister.

[1] Young men who have neglected to register themselves for the Militia are retained with the colours for 2 years; and those who failed to appear for enrolment, for 5 years.

The real period of service with the colours is thus found to be increased from 4 to 8 months and from 8½ to 12½ months for almost three-quarters of the Militiamen of the unmounted branches of the Service (to be exact, 11,240 out of 15,680), and from 18 to 24 months for Militiamen of the mounted branches. Thus, with the exception of the innovation of the 4 months' service for Militiamen, the new law introduces no changes with regard to the compulsory active service of infantry; but, on the other hand, it increases from 18 to 24 months the period of service for the mounted troops.

3.—Ordinary Summons for Service.

Militiamen are liable to be called out for drills for a total maximum period of 12 weeks divided amongst three years, in unmounted corps, and for a maximum of eight weeks divided between two years in mounted corps. The number and duration of the drills may be reduced for men belonging to the Administration troops and to the Engineer Telegraph Company, as well as for Militiamen who have served "the remaining portion," and for N.C.O. candidates who have remained with, or re-engaged voluntarily for service with the colours after the departure of the class.

Hitherto, Militiamen of all branches of the Service were liable to be called out annually for a drill of 6 weeks until the expiration of their fifth year of service. As a matter of fact, they were only recalled once or twice, according to their branch of the Service, for a period of 30 to 35 days.

4.—Extraordinary Summons for Service.

Men of the junior class of the Militia may also be kept or called to the colours in order to maintain or re-establish public tranquillity, or whenever other imperative reasons demand it. At the same time, after it has been called out for 6 weeks, the Government must present a scheme to Parliament definitely giving the limit of its service.

Organisation of the Landwehr and Suppression of the Schutterij.

According to the new law, the Landwehr consists for 7 months of Militiamen of the unmounted branches of the Service, not including torpedo men, and those exempted from service, who have figured for 8 years on the lists of the Active Army. It is formed into companies and battalions. During their term of service in the Landwehr, the men, with the exception of those belonging to the hospital and administration companies, are liable to be called out for two drills of 6 days' duration each. They are also liable to a muster inspection in the years when they are not called out. A Royal decree will determine the lists of Militiamen exempted from active service and from inspections in the Landwehr, and of those definitely or provisionally exempted in time of war. In the event of war, when war is imminent, or in other extraordinary circumstances, the Landwehr units are distributed amongst the army corps or formed into independent commands. At the same time a certain number of them are kept for police duty by Royal decree. Voluntary engagements may be received for the Landwehr; the conditions will be fixed by a Royal order.

The lower ranks are recruited, first, from among Militiamen who hold the rank of corporal or sergeant at the time of their passage into the Landwehr; secondly, from amongst non-commissioned officers of the Reserve; thirdly, from Militiamen or Volunteers who fulfil the requisite conditions.

The officers are taken: first, from amongst non-commissioned officers of the Landwehr who have shown capacity; secondly, from amongst officers of the Active Army; thirdly, from reserve officers. The command of battalions and companies is reserved exclusively for officers of the two latter.

General and field officers of the Army may be charged with the supervision and inspection of the Landwehr troops.

Recruiting for the Schutterij will be suspended from the date of law being put in force, the Schutterij itself will be finally suppressed five years after the first passage of the Militiamen of the Army into the Landwehr.

War Strength.

The total effective of the Army on a war footing is not provided for by law. At the same time it may be estimated at 90,806 officers, N.C.O.'s, and men, according to the tables annexed to the scheme dealing with the composition of the military forces. The war effective of the Landwehr is estimated at 49,650 officers, N.C.O.'s, and men, not including Volunteers. The total war strength thus reaches the number of 140,650 officers, N.C.O.'s, and men, when the new laws have produced their effects.—*Bulletin de la Presse et de la Bibliographie Militaires.*

Russia.—The following "Instructions for Detachments of Mounted Riflemen" were drawn up by Lieut.-General Tserpitskiï, commanding the Russian troops in Southern Manchuria, and were published in the *Razviédtchik* ("Scout") on the 11th June last. As this is the first time that instructions of this nature regarding the training and duties of mounted infantry have been issued, it may be well to reproduce them almost *in extenso*.

1. Detachments of mounted riflemen in no way take the place of cavalry. A rifleman, although mounted, retains altogether the characteristics of an infantry soldier; in other words, it should not be forgotten that a mounted rifleman fights only on foot, and that his mount is merely given to him to enable him to get about more rapidly. It is with this idea that the instruction of mounted infantry should be carried out.

2. The first care of a commander of a detachment should be to perfect the instruction of his mounted infantry in individual firing.

3. As regards equitation, it is by no means necessary to expect a mounted infantryman to have an absolutely correct seat on horseback; it is sufficient if he has a natural position and a firm seat, and that he is able to remain some hours on horseback without fatigue, so that he can get over 50 versts (about 33 miles) and more.

4. It is necessary to insist that from the very beginning he should adjust his stirrups correctly (if the stirrups are too short the limbs soon get cramped, and the rider is quickly fatigued; if the stirrups are too long, he loses them and galls his legs). The stirrups are properly adjusted if when resting on them the rider can place his fist between the saddle and his thigh.

5. As soon as the mounted infantry have had three or four lessons in equitation in the riding school, they should be taken out on to broken ground, by increasing each time the duration of these rides, the seat of the riders will be gradually strengthened, and will quickly habituate them to the easy management of their horses.

6. After two or three riding lessons at a walk, the mounted infantryman should be taught to trot, and to trot out.

7. It is useless to teach the rifleman the gallop. As soon as he is sufficiently accustomed to the trot he will himself naturally take to the quicker pace.

8. Advantage should be taken of the outdoor riding lessons to drill the men in the execution of the most simple cavalry movements, after they have first been taught them on foot.

9. Particular care should be taken to see that the mounted infantryman is able to dismount rapidly, whatever may be the formation of the detatchment, and at whatever pace it may be going at. He should be able to perform this movement as perfectly as possible. On the command "Dismount," the man will get off his horse and immediately couple the horses in the following way: The horses being formed in one rank, side by side, but head to tail, each rider will pass the bridle of his mount under the girth of the next horse and fix it to the back part of the saddle of the latter. When this is completed, all the men, with the exception of 2 per squad, who will remain with the horses, will rapidly fix bayonets and immediately take up the formation required. The men should also be able to execute the inverse movement just as quickly and as perfectly; as soon as they have jumped on their horses they should go, without losing a moment, to the place where they are most required. On the command "To your horses!" the men should rush to their horses and uncouple them; on the command "Mount," then mount and form front.

10. Although, as has been said above, mounted infantry are only meant to fight on foot, they should, nevertheless, with the object of acting promptly and suddenly, carry out nearly all movements within the fire zone on horseback. In order to minimise losses as much as possible, it is indispensable that from that time forward they should manœuvre in extended order. On the command "In extended order, march!" the men will form into one rank, at three paces interval, keeping their alignment by the centre, the squad commanders placing themselves ten paces in front of their squads. This formation once taken, the men will gallop to where they will find cover, or an advantageous position for firing. On a given signal, arranged beforehand, the men will re-assemble rapidly on their commander, dismount, couple horses, open fire, or attack the enemy at the point of the bayonet.

11. In an attack on an *impan*[1] the following procedure may be observed: after having crossed the zone of fire, at a gallop and in extended order, a portion of the detachment will dismount, as far as possible in a dead angle, or near a wall undefended by the enemy, and will then charge with the bayonet on the adversary's flank or rear. In the meantime the other portion of the detachment (half a sotnia) concealed in a favourable position will support the attack with its fire.

12. The attack on a wood will be carried out in a similar manner; one company will fire on the outskirts, whilst the other will gallop on to the flank or rear of the enemy, dismount and charge with the bayonet. The first company (that firing on the outskirts of the wood) will then mount and gallop in support.

13. In the event of an ambuscade (for which the Chinese have a great predilection) the mounted infantry should dismount without minding their horses, and immediately charge the enemy with the bayonet. The latter will not await the charge, but will take to flight.

14. In the event of the "Alert" sounding, when they are resting, mounted infantry should proceed similarly as laid down in para. 13. The chief point is to beat off the attack—the horses can be looked to afterwards. Should a man be accidentally deprived of his horse, he should not fall out.

15. When halting it is as well, so as to be ready for any unexpected attack, to place sentries on high positions, such as a tree, house, etc.

16. When a detachment of mounted infantry is obliged to pass the night near an *impan* the men may be placed in the temples which are always to be found in its vicinity. As these temples are always isolated, the sentries are able to watch all the approaches more easily. Further, the temples being usually built of stone and surrounded by a stone wall, makes a sudden attack most difficult on the part of the enemy, and enables a small detachment to offer a prolonged resistance to a numerically superior force.

17. Owing to the predilection of the Chinese for ambuscades, a detachment should on all marches be carefully covered by patrols, in front and in rear, if the country is open, and also on the flanks in broken country. The strength of such patrols will, as a rule, be two men.

18. Marches should be carried out as follows:—

a. If great speed is not necessary and the distance to be covered does not exceed 30 versts, the whole march may be conducted at a walk. In that case, 40 minutes after leaving the bivouac a halt of 10 minutes should be made, to allow the horses to stale and the men to look over their equipments and tighten the girths. This rule should be rigidly enforced, otherwise after the first march half the horses will have sore backs. It is also advisable that the men should dismount every two or three hours and lead their horses by the bridle for 10 minutes. In very cold weather this rule should be followed oftener. After having completed half the distance, a halt of about 40 minutes should be made, during which the men

[1] An *impan* is a four-faced redoubt, with loopholed clay walls, inside which the barracks of Chinese soldiers are situated.

can prepare and drink tea and the horses may be fed. With reference to the above, it may be noted that the Manchu horse can do about 5 versts (about 3¼ miles) an hour.

b. When the distance to be covered is greater than 30 versts, and if haste is necessary, the walk and the trot should be used alternately, five minutes at a walk and ten at a trot, and so on. By this method a speed of 10 versts an hour may be attained. The horses' feet should be carefully examined, not only before starting, but also at the halts, and at the conclusion of the ride. As detachments of mounted infantry usually march independently, and are separated from their respective corps, it is indispensable that each detachment has with it two or three good shoeing smiths. During the winter men should wear furred gloves, and the stirrups should be covered with felt or cloth. The men should, in addition, be provided with the following articles, viz., a picket with rope for each man, a teapot for every three men, a canvas bucket and a knife for every five men, a saddle-bag for each man to be attached to the saddle, and containing the following rations, viz., biscuits for five days, tea and sugar for one month, 1½ lbs. of salt, 3½ lbs. of oatmeal, ¾ lb. of lard, and 3 preserved meat rations. Independently of these rations, every man should have all the articles that an infantry soldier carries in his valise.—*Revue du Cercle Militaire.*

General Dragomirov has recently drawn up a new Field Service Regulations. The *Viéstnik Kazatchikh Voïsk* gives extracts from these regulations, laying down the duties of a soldier in action. These have been translated by Captain Painvin in the *Revue du Cercle Militaire*, and are as follows :—

1. Sacrifice yourself, but save your comrade.

2. Continue to advance, even when those in front of you have fallen.

3. Do not be dismayed at losses ; whatever the obstacles may be, you will certainly conquer.

4. If the situation is painful for you, it is just as much, and perhaps even more so, for the enemy ; you, however, are only able to see your own situation, and not that of the enemy, which is certainly not better than yours. Therefore never be discouraged, but always be bold and tenacious.

5. When on the defensive, one must strike, and not merely defend oneself. The best method of defence is to attack.

6. In action it is the boldest and most obstinate who wins, and not the most numerous or the most skilful. Victory cannot be snatched in a moment. Should one not succeed in seizing it the first time, one must assault two, three, or even four times, until one's object is attained.

7. More or less skilful dispositions can only assist in gaining one's object with the smallest possible losses. But to really succeed one must be determined to perish sooner than fail.

8. Whatever unexpected obstacles may be met with on one's way to the objective, one must think only how to overcome them, and not that matters are going badly.

9. In a well-organised unit there is no rear, and there are no flanks, but everywhere a front facing the enemy.

10. However suddenly the enemy may appear, it must not be forgotten that he must be attacked, either with the rifle or the bayonet. Between these two the choice is not difficult : if the enemy is near, always the bayonet ; if he is at a distance, first the rifle, then the bayonet.

11. There is no situation from which it is not possible to withdraw with honour.

12. In action there is no relief. Once engaged you must fight to a finish ; you may be supported, never relieved.

13. In action you will go only to the assistance of the unwounded, it is only after having beaten the enemy that you may think of the wounded. He who concerns himself about them in action is a coward, and he does not do so from compassionate

motives. It is not his comrades who are dear to him, but his own skin. There are always special detachments told off to look after the wounded.

14. Should you rise to command, do not meddle with the affairs of an inferior, if you see that he is conducting them properly. In action you will have quite enough to do in minding your own business. He who meddles with other people's affairs neglects his own. Each rank should have its own sphere of independence and responsibility; if you fail to recognise the former, you destroy the latter. A commanding officer should see that each one does his duty, and should tolerate no negligence.

Since 13th January, 1874, military service has been rendered obligatory in Russia on all men from their twenty-first year. Out of about 870,000 young men reaching their majority every year, some 287,000 are taken into the active Army

and the remainder are inscribed partly in the reserve and partly in the second reserve, or Zapas. The term of service is in European Russia five years in the active Army, thirteen years in the reserve, and five years in the Zapas; seven years in the active Army and six years in the reserve, in Asiatic dominions; and three years in the active Army and fifteen years in the reserve, in Caucasia. In case of need the Minister of War has the right of keeping the men under the colours for another six months. College men, doctors and teachers are exempted, and certain privileges are granted on account of education. The lowest estimate which can be made of the peace strength of

the Russian Army puts the number of officers at 36,000 and of the rank and file at 860,000 men, the total number being 896,000. In war the total strength is approximately 63,000 officers and 3,440,000 men, the total being 3,500,000.

Even with such a vast Army it is, of course, necessary to maintain the same efficiency as in smaller Armies, and in Russia, as in Germany, many unique exercises have been adopted, among them being the one shown in our illustration, which represents a bayonet exercise with oscillating dummies. These oscillating dummies are placed on the top of the intrenchments which the soldiers scale. After the men have delivered their blows they go down the other side, at the bottom of which another row of similar dummies has been placed. Their attack is rapid, and the soldiers, going through the ranks of their silent victims, place themselves in skirmishing order. The dummies consist of wooden cradles to which are secured uprights and cross pieces; figures simulating men are secured to the top piece and the side rails. At first the appearance is rather gruesome, suggesting a series of gallows.—*Scientific American.*

NAVAL AND MILITARY CALENDAR.

JUNE, 1901.

1st (Sat.) H.R.H. the Duke of Cornwall and York presented South African War Medals to 1,000 Colonials at Sydney.

" " Volunteer Service Detachments of the Queen's Westminsters, 2nd London, and West Middlesex returned to London from South Africa.

3rd (M.) H.M.S. "Beagle" left Portsmouth for the Cape.

" " Affray took place between foreign troops at Tientsin, China. Some Royal Welsh Fusiliers who were acting as police, after being attacked, fired on French and German soldiers.

4th (T.) Jamestown, in Cape Colony, surrendered to Kritzinger.

" " The Mad Mullah was severely defeated by Colonel Swayne.

" " Field-Marshal Count von Waldersee, Commander-in-Chief of the Allied Forces, left China for Europe.

5th (W.) Jamestown was re-taken by the British.

6th (Th.) H.M.S. "Pegasus" left Sheerness for the Mediterranean.

" " Report of the Dawkins Committee on War Office organisation was published.

7th (F.) H.M.S. "Flora" paid off at Devonport.

" " Launch of first-class armoured cruiser "Sully" at La Seyne, Toulon, for the French Navy.

8th (Sat.) News received that successes had been gained in Cape Colony over Van Reenan's and Kritzinger's commandoes. Many Boer prisoners were taken, besides large quantities of horses, ammunition, cattle, and stock.

10th (M.) H.M.S. "Thetis" paid off at Chatham.

" " H.M.S. "Ringdove" paid off at Devonport.

" " Lord Kitchener reported that during the month of May 2,640 Boers were killed, wounded, and surrendered.

11th (T.) Van Rensburg and his commando surrended at Pieterburg.

12th (W.) H.M. the King, accompanied by H.M. the Queen, presented the South African War Medals to about 3,000 men on the Horse Guards' Parade.

" " T.R.H. the Duke and Duchess of Cornwall and York reviewed 4,000 men, including naval contingents, at Auckland, and presented South African War Medals to New Zealand contingents.

12th (W.) 250 Victorians were surprised at Steilkoolspruit. British loss 18 killed, 42 wounded, 2 pom-poms captured, 52 officers and men escaped; the remainder were captured.

" " Two Boers who escaped from Pretoria after taking the oath of neutrality were shot.

14th (F.) H.M.S. "Racoon" arrived at Sheerness from East Indies.

15th (Sat.) H.M.S. "Eclipse" left Sheerness for China.

" " General Elliot, after severe fighting, defeated De Wet near Vrede. British loss 20 killed and 25 wounded. Boer loss 17 killed, 3 wounded, besides losing 71 loaded wagons, 45 prisoners, 58 rifles, 10,000 rounds small arm ammunition, and 4,000 cattle.

19th (W.) H.M.S. "Magicienne" paid off at Devonport.

20th (Th.) A party of Midland Mounted Rifles cut up by the Boers near Waterkloof, their loss being 10 killed and 66 prisoners.

23rd (S.) H.M.S. "Blake" arrived at Plymouth from Australia.

" " H.M.S. "Linnet" arrived at Plymouth from China.

" " H.M.S. "Salamander" arrived at Plymouth from the Mediterranean.

24th (M.) T.R.H. the Duke and Duchess of Cornwall and York reviewed 10,000 New Zealand troops, and afterwards presented War Medals.

" " General Cailles, in command of the Filipinos since the capture of Aguinaldo, surrendered with his staff and 650 men to the Americans.

25th (T.) H.M.S. "Albion" commissioned at Chatham for China.

" " H.M.S. "Porpoise" paid off at Portsmouth.

" " H.M. the King inspected the Yeomen of the Guard at Marlborough House, and presented the Ashanti War Medal to some African troops.

26th (W.) A Boer attack on Richmond, Cape Colony, was repulsed.

29th (Sat.) Lord Kitchener reported an unsuccessful Boer attack on two blockhouses near Brugspruit on the Delagoa Railway. He also announced that Field Cornet Depriez and a commando of 44 men surrendered to the British at Pietersburg.

Addendum, May Calendar.

30th June Launch of first-class battle-ship "Regina Margherita" at Spezia for Italian Navy.

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NAVAL.

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(*concluded*). 29th June.—"Major-General von Schwarzhoff." "The Boer War, 2nd Part" (*continued*). "The Fight of Sapignies on the 2nd January, 1871." "Extraordinary Expenditure of the Italian Army Budget."

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Rivista Militare. Rome: June, 1901.—Has not been received.

PORTUGAL.—*Revista de Engenheria Militar.* Lisbon: May, 1901.—"Defensive Organisation of the Town and District of Lourenço Marques" (*continued*). "The Walls of Lisbon" (*continued*). "Military Notes."

Revista de Infanteria. Lisbon: June, 1901.—"The Terrain and Modern Arms." "Corporals." "The Military Bicycle." "Especial Instruction for Explorers." "South Africa." "The Law of Promotion."

RUSSIA.—*Voïénnyi Sbórnik.* May and June, 1901.—Have not yet been received.

SPAIN.—*Memorial de Ingenieros del Ejército.* Madrid: June, 1901.—"The Academy of Engineers in the Last Manœuvres." "Some Considerations on Coast-Defence Works." "The Perfection of the Pollak and Virag System of Rapid Telegraphy."

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SWITZERLAND.—*Revue Militaire Suisse.* Lausanne: June, 1901.—"A Few Ideas on Discipline." "Q.F. Krupp Guns, Models 1899 and 1901" (1 plate). "Advantages and Inconveniences of Field Guns with Recoiling Carriages."

UNITED STATES.—*Journal of the United States Artillery.* Fort Monroe, Virginia: May-June, 1901.—"Fire Control and Fire Direction." "Automatic Lighting as Applied to Sea-Coast Artillery Fire." "An Isthmian Canal from a Military Point of View." "The 16-inch Breech-Loading Rifle." "The Development of the Krupp Field Artillery Matériel." "Professional Notes."

NOTICES OF BOOKS.

With the Boer Forces.—By HOWARD C. HILLEGAS. London: Messrs. Methuen & Co., 36, Essex Street, W.C.

All Englishmen will read this work with mingled feelings of indignation and amusement. The abuse of the officers of the British Army, although veiled by Boer opinion, is none the less the conviction of the author, otherwise he would not have voiced the slander. We do not for a moment imagine that the anti-English opinions to which Mr. Hillegas has given expression are shared by the intelligence of his country. On the contrary, we know that the American people are as proud of our common origin, ancestry, and history, as we are ourselves. Judging from the portrait with which the author has favoured us he seems to be very young, and is probably inexperienced, and that may to some extent excuse his hasty conclusions. The author has, at the outset, stated that his "sympathies were with the Boers," and he adds that he will not tell untruths to whiten their character. The gentleman seems to have lost sight of this assurance as his narrative progresses, for he does not scruple to distort and misrepresent figures. His estimate that there were never more than 30,000 Boers under arms, and no more than half that number "were ever engaged in battles," is certainly influenced by the same spirit which caused him to give expression to the following opinion in regard to the Army operating under Joubert:—"The army which he commanded in Natal, although only 12,000 or 13,000 men in strength, was equal in fighting ability to 75,000 British troops, and the only thing it lacked was a man who would fight with them, and lead them after a fleeing enemy." He adds that if Joubert had pursued the British forces after all their defeats the Natal campaign would have been fought near the Indian Ocean. Mr. Kruger did not support these figures when he stated, according to the papers, on landing at Marseilles that the British had lost 100,000 in the war and that the Boer losses did not exceed 17,000 men. No one who has followed the course of the several campaigns would believe for one moment that the Boer forces did not total more than 30,000 men towards the end of 1899, and that no more than 15,000 ever engaged in the fighting. At that time, Cronjé occupied lines extending for about 25 miles along the Orange River, Botha held a large British force in check at the Tugela with at least 10,000 men, when the forces besieging Ladysmith must have numbered 5,000 more; then there were other small Boer armies north of Ladysmith, along the Basuto frontier, those threatening Zululand and invading the Cape Colony, besides others occupied in the investments of Kimberley and Mafeking, and in the occupation of the passes and garrisons. Allowing for the remarkable mobility of the Boer mounted troops, there could not have been less than 50,000 Boers under arms, which would leave not much over 40,000 men to be provided by the populations of the two Republics, if the mercenaries be deducted. The author states without the least compunction, that "Spion Kop was won from 3,000 British by 350 Boers." Nothing can be further from the truth. Spion Kop was abandoned, not won, by a mistake, and the British troops had been exposed to a concentrated fire of artillery for a whole day without having any guns either on the hill or in support. If our troops were beaten it was by the Boer artillery fire, not by the men who stormed the hill, and who did not come under fire until within 200 yards of our advanced works. So garbled a statement has fortunately seldom been foisted upon the public as a truism. Mr. Hillegas has given us valuable information as to the Boer tactics; the independent concentration of the Boers at the points needing reinforcement is not quite suitable to a disciplined army, but was most effective, and might be adapted to a regular service with modification. The author in the preface states that the South African politicians and speculators

caused the war; this is a decided let off for Mr. Chamberlain, who may be congratulated on having at length obtained a champion amongst the pro-Boers. He also casts the onus on the Afrikander Bond, on President Steyn, and on Secretary Reitz, but exonerates Mr. Kruger completely. Mr. Hillegas seems to forget that a blink from some men is quite as potent as active participation. The revolting chapter on foreigners in the war had better have been omitted; decent folk do not revel in the doings of desperadoes and adventurers; but that on the Boer women is full of useful information as to the capabilities of the fair sex in time of war. The vexed question of expansive bullets is touched upon slightly; the author considers that Boers and British both used them, and he gives it as his opinion that thousands of rounds of dum-dum cartridges were captured from the British and were afterwards used by the Boers. It is possible that some cases may have found their way by mistake to South Africa, but it is incredible that they could have been sent to the front. He considers the Boer intelligence department as more or less chimerical, and attributes the accurate information in regard to our movements more to the efforts of the country people, both white and black. The book, generaliy, throws a considerable amount of light upon the conduct of the war from a Boer point of view, and it will no doubt be eagerly read by those who sympathise with their cause; but there is also something to be gained by those who desire to study the war in South Africa.

The Life of a Regiment: The History of the Gordon Highlanders. By Lieut.-Colonel C. GREENHILL GARDYNE, of Glenforsa, late Scots Guards and Gordon Highlanders. Edinburgh: David Douglas, 1901.

The Gordon Highlanders is one of the regiments which have not hitherto been fortunate in possessing a good history. Neither battalion of the regiment is wanting in materials on which to found such a work; but it so happens that, with the exception of Cannon's imperfect accounts, no one has come forward to do justice to the gallantry of the Gordons. Colonel Greenhill Gardyne has stepped into the breach, and performed the task in a more than ordinarily able manner. The first volume of the history is in the hands of the public, and there need be no hesitation in pronouncing that portion as not only sound historically, but fascinating reading. It deals exclusively with the old 92nd, which was the third of the three regiments raised in the Highlands between 1759 and 1793, through the personal popularity and territorial influence of the fourth Duke of Gordon, known by the Highlanders as "Coileach an taobh tuath," or "The Cock of the North."

The authority to raise the 92nd was dated 10th February, 1794, and the command was given to the Duke's son, the Marquis of Huntly, who had served as captain in the Black Watch, and was then a captain and a lieut.-colonel in the 3rd Foot (now Scots) Guards. The Duke himself and his son took a personal interest in the recruiting, and the celebrated Duchess Jean, still a beautiful woman, lent to it all the prestige of her high position, and all the grace and charm of manner for which she was famed alike in Court and cottage. She rode to the country fairs in Highland bonnet and regimental jacket, and it is told how she gave a kiss to the men she enlisted. The regiment was soon recruited to strength and was embodied at Aberdeen on 24th June, 1794, as the 100th Regiment of Foot, or Gordon Highlanders, the latter title signifying that the regiment had been raised by the Duke of Gordon, and not, as is generally supposed, that it was composed of Gordons. The regiment embarked at Southampton for Gibraltar on 5th September, from which period its fascinating history is one continuous record of loyalty to Sovereign and country, devotion to duty, gallantry in action, and good conduct in quarters.

Space will not admit of even a casual reference to the many distinguished services which the 92nd rendered during the period of which the first volume of Colonel Gardyne's book treats. It embraces the Expedition to North Holland, where the regiment won its first battle honours in the desperate fight among the sand-hills between Egmont and Bergen in 1799; the attack on Ferrol, and the demonstration against

Cadiz; and the Expedition to Egypt in 1801, where it won fresh distinction. The regiment was at Copenhagen in 1807; in the Expedition to Sweden and afterwards in Portugal in 1808; with Moore at Corunna in 1809, and afterwards in the Walcheren Expedition. In the Peninsula the 92nd won fresh laurels on many a hard-fought field, particularly at the battle of Fuentes d'Onor, the capture of the forts at Almaraz, the battle of Vittoria, the fighting in the Pass of Maya, in the Pyrenees, and the great battles on the Nive and at the passage of the Gave and capture of the town of Aire. In the Waterloo Campaign the 92nd was distinguished for its gallantry at Quatre Bras and at Waterloo. The battalion marched with the Army to Paris and returned home in 1816.

If Colonel Gardyne's subsequent volumes are up to the standard of the one now under review, the 92nd will be able to boast of one of the best written and most interesting of regimental histories. It is well illustrated and the price is reasonable.

History and Services of the 78th Highlanders (Ross-shire Buffs), 1793-1881. By Major H. DAVIDSON, late 2nd Bn. Seaforth Highlanders. Edinburgh and London: W. & A. K. Johnston, 1901.

The 78th is another regiment which has never had justice done to its distinguished services until the present compiler took the subject in hand. The third of three regiments which bore a similar number, it was raised in 1793 through the personal influence of the last Earl of Seaforth, the Chief of the Mackenzies, a second battalion being added in 1794. The services of the regiment include the Duke of York's campaign of 1794-95, the Expedition to Quiberon, the capture of the Cape of Good Hope in 1795, the Mahratta Campaign in 1803-04, the Battle of Maida in 1806, the campaign in Holland in 1813-14, the reduction of Java, the Persian Campaign in 1856, the Indian Mutiny Campaign, in which its distinguished services are matter of history, and the Afghan War in 1879-80. During this long period of varied service the reputation of the old 78th Highlanders has stood very high, and it is a great consolation to those interested in the regiment to find so worthy a chronicler of its deeds as Major Hugh Davidson of Cantray. One cannot help regretting, however, that in this beautifully got up history very little reference is made of the 72nd, the present first battalion of the Seaforth Highlanders, which was raised by Kenneth Mackenzie, Earl of Seaforth and Chief of the Clan Mackenzie, and has a history of faithful service surpassed by few of the Highland regiments. Both the present first and second battalions of the Seaforth Highlanders, the old 72nd and 78th, have very much in common, and being since 1881 part and parcel of the same regiment, one cannot help wishing that Major Davidson had continued the history to the end of the nineteenth century, and included as much as possible of the services of the 72nd as well as of his old regiment the 78th.

Major Davidson's book occupies two large volumes. It is beautifully got up and extremely well illustrated, and is a welcome addition to military historical literature.

PRINCIPAL ADDITIONS TO LIBRARY DURING JUNE, 1901.

Movements of the British Legion. By Major RICHARDSON. 2nd Edition. 8vo. London, 1837.

Our Flags. By Rear-Admiral S. EARDLEY-WILMOT. 5s. Small Royal 8vo. London, 1901.

Army Medical Department Report for the Year 1899. Vol. XLI. 8vo. London, 1901.

Instructions and Training of the Troops of the German Army. Prepared for the Intelligence Division of the War Office, by Colonel J. M. GRIERSON, M.V.O., R.A. 8vo. London, 1900.

Some Records of the Royal Monmouth Militia. By Captain W. F. N. NOEL. 8vo. London, 1886.

Smithsonian Institution: Bureau of Ethnology. 17th and 18th Annual Reports, 1895-96, 1896-97. 4to. Washington, 1898-99.

Code de Justice Militaire pour l'Armée de Terre. Official. Demy 12mo. Paris, 1857.

Les Campagnes du Maréchal de Saxe. By J. COLIN. I^re^ Partie. 8vo. Paris, 1901.

The Life of a Regiment, and the History of the Gordon Highlanders, from its Foundation in 1794 to 1816. By Lieut.-Colonel G. GARDYNE. 8vo. Edinburgh, 1901.

Précis of Information concerning the British Central Africa Protectorate, with Notes on Adjoining Territories. Official. Compiled in the Intelligence Division, War Office, by Major C. B. VYVYAN. 8vo. London, 1899.

The New South Africa. By W. BLELOCH. 10s. 8vo. London, 1901.

Climbing and Exploration in the Bolivian Andes. By Sir MARTIN CONWAY. 12s. 6d. 8vo. London, 1901.

A Leader of Light Horse—Hodson of Hodson's Horse. By Captain L. J. TROTTER. 16s. 8vo. London, 1901.

Blue Shirt and Khâki—A Comparison. By J. F. J. ARCHIBALD. 7s. 6d. Crown 8vo. New York, 1901.

La Guerra in Mare. By ENRICO BARONE. Crown 8vo. Torino, 1900.

Manual of Military Engineering. (Provisional Edition.) 8vo. London, 1901.

Public Health, Laboratory Work and Food Inspection. By Staff-Surgeon O. W. ANDREWS, R.N. 8vo. London, 1901.

Schlaglichter auf das Mittelmeer. By OTTO WACHS. 8vo. Berlin, 1898.

Diary of a Nurse in South Africa. By ALICE BRON. Translated from the French by G. A. RAPER. 3s. 6d. Crown 8vo. London, 1901.

Rights and Wrongs of the Transvaal War. By E. T. COOK. 12s. 6d. 8vo. London, 1891.

'Twixt Sirdar and Menelik. By Captain M. S. WELBY. 16s. 8vo. London, 1901.

Treatise on Service Ordnance. 5th Edition. Official. 8vo. London, 1901.

King's Regulations—Addenda, 1901. Official Copy. 8vo. London, 1901.

"*The Rifle Brigade Chronicle for 1900.*" Compiled and Edited by Lieut.-Colonel WILLOUGHBY VERNER. (Eleventh Year.) Centenary Number. 8vo. London, 1901.

All the World's Fighting Ships. By F. T. JANE. (Fourth Year.) Medium 4to. London, 1901.

A Diary of the Siege of the Legations in Peking. By NIGEL OLIPHANT. 5s. 8vo. London, 1901.

RARE MEDAL STRUCK IN HONOUR OF CAPTAIN (AFTERWARDS FIELD-MARSHAL VISCOUNT) MOLESWORTH.

J. J. K. & Co., Ltd., London.

JULY JOURNAL.

ADDENDUM.

al Notes. Page 882. Fleet B—Main Fleet. To second-class battle-ships *add* "Collingwood."

ERRATUM.

e 906. Addendum, May Calendar. *should read:* Addendum, June Calendar. 30th May. Launch of first-class battle-ship "Regina Margherita" at Spezia for Italian Navy.

ERRATUM IN JUNE JOURNAL.

error in the Summary of Total Amount of German Naval Estimates for 1901. For correction, see this month's Naval Notes—Germany.